

THE
CONDOR

A Magazine of Western
Ornithology



Volume XXXIII

January-February, 1931

Number 1



WKS

COOPER ORNITHOLOGICAL CLUB

N. A. Wood
Ready to bind
with vol 34
for 1932

THE CONDOR

A Magazine of Western Ornithology

Published Bi-monthly by the Cooper Ornithological Club

Entered as second-class matter May 15, 1925, at the post-office at Berkeley, California,

under Act of Congress of February 28, 1925, Section 412, paragraph 4.

Issued from the Office of THE CONDOR, Museum of Vertebrate Zoology, Berkeley, California.

SUBSCRIPTION RATES

Three Dollars per Year in the United States, payable in advance.

Fifty Cents the single copy.

Three Dollars and Twenty-five Cents per Year in all other countries in the International Postal Union.

COOPER ORNITHOLOGICAL CLUB

Dues are payable in advance on January first for the calendar year: Three Dollars per year for members residing in the United States; Three Dollars and Twenty-five Cents in all other countries. Members whose dues are paid receive THE CONDOR without additional charge.

Send manuscripts for publication to the Editor, J. GRINNELL, Museum of Vertebrate Zoology, University of California, Berkeley, or to the Associate Editor, JEAN M. LINSDALE, same address.

Send dues and subscriptions to JOHN McB. ROBERTSON, Associate Business Manager, Buena Park, California; orders for back numbers of THE CONDOR and the PACIFIC COAST AVIFAUNA series to W. LEE CHAMBERS, Business Manager, Box 123, Eagle Rock, California.

Issued January 15, 1931

CONTENTS

	PAGE
Some Flocking Habits of the California Quail (with one illustration).....	John B. Price 3
Notes on the Spotted and Flammulated Screech Owls in Arizona.....	E. C. Jacot 8
Variation in Color of Male House Finches.....	Harold Michener and Josephine R. Michener 12
Charles Andrew Allen (with one illustration).....	Joseph Mailiard 20
Some Flowers Visited by Birds.....	A. L. Pickens 23
FROM FIELD AND STUDY	
Nesting of the Piñon Jay in Oregon.....	J. C. Braly 29
Wood Ibises Summering in San Diego County, California.....	Clinton G. Abbott 29
The House Sparrow and the Motor Car.....	Laurence B. Potter 30
Pliocene Bird Remains from Santa Barbara, California.....	Hildegard Howard 30
The Condor in San Benito County, California.....	G. Willett 31
The California Condor in Nevada.....	Loye Miller 32
Observations on the Incubation and the Care of the Young in the Jacana (with one illustration).....	Alden H. Miller 32
Late Nesting of the Black Phoebe.....	J. Thomas Fraser, Jr. 34
The American Egret in the Lower Sacramento Valley, California.....	Tracy I. Storer 34
Early Record of Birds in Arizona and New Mexico.....	Alexander Wetmore 35
Concerning some Western Races of <i>Poliophtila melanura</i>	A. J. van Rossem 35
Three Note-worthy Bird Records from Barrow, Alaska.....	Laurence M. Huey 36
The Type Locality of the Californi. Quail.....	J. Grinnell 37
Nevada Savannah Sparrow Breeds in Yellowstone.....	Joseph Dixon 38
Four Hundred Black-necked Stilts.....	Clinton G. Abbott 38
Further Occurrences of Emperor Geese in California.....	J. Grinnell 38
EDITORIAL NOTES AND NEWS..... 39	
PUBLICATIONS REVIEWED: Nicholson's Census of Heronries.....	T. T. McCabe 40
Phillips and Lincoln on the Conservation of Waterfowl.....	J. Grinnell 41
MINUTES OF COOPER CLUB MEETINGS.....	43





THE CONDOR

A BI-MONTHLY MAGAZINE OF
WESTERN ORNITHOLOGY

Published by the
COOPER ORNITHOLOGICAL CLUB

VOLUME XXXIII

JANUARY-FEBRUARY, 1931

NUMBER 1

SOME FLOCKING HABITS OF THE CALIFORNIA QUAIL

WITH ONE ILLUSTRATION

By JOHN B. PRICE

The California quail (*Lophortyx californica*) is one of the common residents of the Stanford University campus where it is protected and has become quite tame and fairly easy to observe. During the two school years of 1927-28 and 1928-29 the writer made a study of the local movements and habits of some of the birds of the Stanford campus. In the first year most of the work was done with the zonorhynchias, but in the second year the quail were observed on an average of about an hour a day.

The first thing noticed was the well known fact that quail are usually seen in flocks or coveys and this suggested the following problems:

Do the quail form definite flocks or is each covey a haphazard group of birds changing from day to day?

Does a flock have a definite territory or range, with a definite roosting place?

Does a flock remain the same size throughout the winter season?

Do the same individual birds remain in the same flock or do they change from one flock to another?

Do birds change flocks from year to year?

What happens to the flock during the breeding season?

Methods of study.—For observation a pair of 6-power Leitz field glasses was used. Many of the observations were made from a parked automobile. The Stanford campus is intersected by many lanes, and the birds did not seem to fear an observer in a car as they did one on foot. The use of the automobile also enabled the observer to cover more ground and study several flocks in the time required for a foot observer to locate and count one.

In order to study the movements of individual quail, it was necessary to mark them so they could be distinguished. This was done by banding and by staining with distinctive colors the feathers of the birds.

Ever since 1923 bird banding has been carried on by various persons on the Stanford campus, although not many quail were captured before 1927. The writer is indebted to the previous workers at Stanford for some of the results, showing the ages of birds captured.

Banding birds has the disadvantage that the bird must be recaptured to have the band read. The stain on the feathers, on the other hand, enables one to dis-

tinguish birds with field glasses in the field. The stain used was originated by Mr. Wilbur K. Butts (*Auk*, XLIV, 1927, p. 329) at Cornell University. It is made by dissolving artist's oil colors in carbon-tetrachloride. It was applied to the light feathers of the neck and head of the quail with a medicine dropper, and apparently did not do any injury, as several birds stained were recaptured in good condition the following year. The other quail did not persecute the stained ones in any way, and the

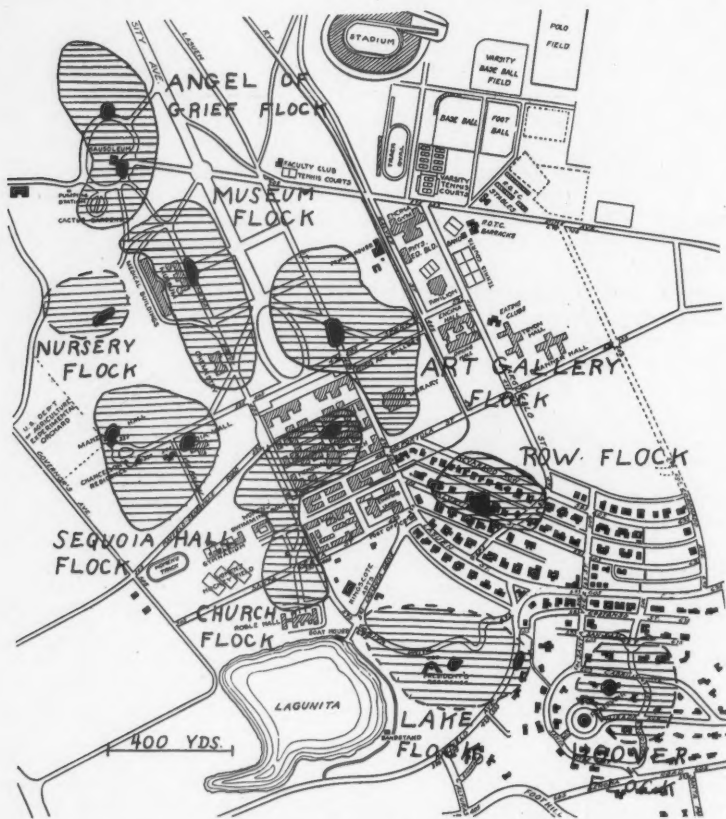


Fig. 1. LOCATION OF TERRITORIES OF QUAIL FLOCKS ON THE STANFORD UNIVERSITY CAMPUS FROM OCTOBER, 1928, TO FEBRUARY, 1929. THE ROOSTING TREES ARE SHOWN IN SOLID BLACK AND THE TERRITORIES OF THE FLOCKS BY PARALLEL LINES.

color could be distinguished for a month and a half; and in the case of one quail the color was clearly visible 74 days after being applied.

Results of the work.—Nine separate quail flocks were found on the campus (see fig. 1). It was soon noticed that each flock roosted in the same group of trees night after night. Most flocks preferred date palms, although a few used oaks or cypress trees. With a definite roosting place each flock was given a label which is

shown on the map. The writer got up before sunrise eighteen times during the last year to observe the flocks coming down from the trees, and he watched them go to roost forty-six times. At various intervals during most days he would make the rounds of the campus in the car and note where the quail were and what they were doing. During the months of October to February, inclusive, the flocks of quail were always to be found inside the limits of their own ranges as shown on the map. They were never seen outside, and two flocks were never observed to mingle together.

Each day the quail follow an elastic program. On a typical winter day the actions and movements of a flock at Stanford are as follows: About twenty to ten minutes before sunrise the quail start to chatter in the roosting trees. Then one will fly at a sharp angle to the ground and start feeding. The others soon follow one by one, and within ten minutes the whole flock is on the ground near-by.

In half an hour, more or less, the flock starts walking to other parts of the range, feeding on the way. During the middle of the day the quail remain quietly resting under bushes or up in trees. At this time the flock spreads out to some extent and is difficult to observe, but it can always be located by one familiar with its range.

In the middle of the afternoon the flock reassembles and resumes its feeding and gradually walks back (or in the case of the Church flock flies as a unit) to the ground in the vicinity of the roosting trees, reaching there about half an hour before sunset. About a quarter of an hour after sunset two or three birds will fly up to the trees. Others follow, and soon afterwards the main body of the flock (sometimes going in two sections) flies up, leaving only a few stragglers left on the ground. These follow suit, and the birds quiet down for the night. On March 20, 1929, however, the quail were heard at 9 p. m. in the palm tree by the museum, calling softly in the moonlight.

The above program is not rigid by any means. On a cloudy day the quail are slower in coming down from the trees and go to roost earlier than usual. Sometimes a flock (especially the museum flock) will split into two separate divisions in the morning and does not reunite until evening. The Sequoia Hall flock roosted in two places (the palm trees by Sequoia Hall and the cypress hedge by Dr. Jordan's residence) but fed together during the day. The Angel of Grief flock changed its roosting place during the season from one group of palms to another and in the spring changed back again, but in spite of these exceptions the movements and actions of the quail were remarkably standardized; and each flock was always to be found in its own range of about 120,000 square yards.

Counting the numbers in a flock is a difficult matter, as the birds are fond of staying in the underbrush. However, enough counts were made of the flocks throughout the year to show that the size of each one remained almost constant during the winter season. The sizes of the flocks were as follows:

Church flock	76	Row flock	70?
Lake flock	100?	Nursery flock	100
Angel of Grief flock	30	Sequoia Hall flock	114
Art Gallery flock	112	President Hoover's flock	50?
Museum flock	114	Total	766?

The question naturally arises "Do the same individual quail remain in the same flock during the season?" Banding and staining were resorted to, to decide this question, which was answered in the affirmative. Fortunately the quail are hungry early in the morning. Grain was scattered under the roosting trees for

several days, and the quail soon formed the habit of eating it the first thing after coming down from the trees. It was a simple, though cold, matter to place a drop-trap under the trees before sunrise and pull the string as soon as a portion of the flock was under. In this way twenty or more quail could be captured at once.

The birds in the museum flock were stained orange on the head and breast; those in the art gallery flock were stained yellow on the head; and those in the church flock (trapped in the evening instead of the morning) were stained red on the head. These colors were distinctive, and with field glasses there was absolutely no danger of confusing the quail from one flock with those of another. Many observations were made of the flocks with the following results.

Flock and color	Number stained	Number seen in same flock	Number seen in other flocks Oct.-Feb.	Mar.-May
Museum (orange)	65	216	5	7
Art Gallery (yellow)	34	57	none	1
Church (red)	44	137	1	6

The above results of stained birds seen in the field only show those cases where an accurate count was possible. Sometimes when watching a flock some stained birds would be seen; but, as the quail were darting in and out of the bushes, it was not possible to tell just how many colored birds there were. In the notes they were recorded as "some" and were always seen in the same flock from which they were stained. The church flock had 13 such extra records; the museum flock 10; and the art gallery 1. From the above it is evident that as a rule individual birds remained in the same flock, but that there was some shifting from flock to flock in the spring.

Some results were obtained by trapping that seem to indicate that the quail often remain in the same flock year after year. In the 1928-29 school year 18 quail were captured that had been banded at Stanford in previous years. The following table shows that most of them were still in the same flock they were banded from.

Year first banded	Number captured 1928-29 in same flock territory	Number captured 1928-29 in other flock territories
1923-1924	1	none
1925-1926	1	none
1926-1927	5	none
1927-1928	8	3

In 1927-28, 54 quail were banded by the writer at Stanford. The next year 11 of these were recaptured, or over 20 per cent, which is a high return for banded birds. In contrast with this there is the case of a female quail, number 286191, which was banded at Stanford on March 12, 1928, and recaptured there on October 28, 1928. On February 20, 1929, she was reported by the Biological Survey to have been found dead at San Jose, California, about 19 miles southeast.

In March, 1929, the flocks became more extended in their ranges and more loose in their organization. The first nest, containing three eggs, was found on April 14 in an area outside the winter territory of any flock. The first young of the season were seen on May 4. The writer expected that the flocks would entirely break up during the mating season, but such was not the case. During the whole season about half the winter numbers of the flocks could be seen going to roost in the regular roosting trees. (Some sections of the flocks were also seen roosting

in other trees outside the winter territory.) Those present for the most part were in pairs, with some single males.

In some cases, at least, the young were brought to the flock before they could fly. One pair had a young one that took three days to learn to fly to the palm with its parents. The first two nights, after many vain attempts to reach the tree, the female led it to a nearby bush where the two spent the night on the ground. The male of the pair roosted in the palm tree. The other adult quail often pecked at the young one but did not seem to hurt it much.

One pair of quail had a nest in the bushes by the English Building. In the evening the two birds would walk across the lawn together, the female would enter the bushes always at the same place which was some distance from the nest and spend the night on it, while the male would fly to the roosting palms of the art gallery flock about 100 yards away.

Only one female was captured on the nest, in the east oval (with a net at night), on May 15, 1929. She proved to be number 440124, banded on March 20, 1928, by Mr. Hugh Israel from a trap by the Stanford Library. She also had been recaptured on March 25, 1929, with the art gallery flock, so it will be seen that this bird spent at least two years with the same flock and nested in the same area.

The writer had hoped to continue this work with the quail the following year by staining birds and moving them from one flock to another in order to see if they would return to the original flock. However, it was not possible to finish the work, but it is hoped that it will be completed at some later date.

CONCLUSIONS

The California quail is resident at Stanford and forms definite flocks which nearly always roost in the same groups of trees throughout the winter season.

Approximately the same number of quail is found in each of these flocks during the winter season.

In the winter season each quail flock has a definite territory or range, of about 120,000 square yards. The birds do not move out of it.

The same individual birds stay in the same flock during the winter season, and there is very little interchanging of birds among the flocks. The quail often remain in the same flock for several years.

In one case a quail left the Stanford campus and was found dead in San Jose, 19 miles southeast, 4 months after last being captured at Stanford.

During the spring the quail are often found outside their winter territory, and there is some interchanging among the flocks. But even during the breeding season of 1929, about half the strength of the flock roosted in the usual trees, and in some cases, at least, the young were brought to these trees as soon as they were able to fly.

Glendale, California, June 3, 1930.

NOTES ON THE SPOTTED AND FLAMMULATED SCREECH OWLS IN ARIZONA

By E. C. JACOT

The Huachuca Mountains of southern Arizona, where these notes were taken, have been visited so frequently by ornithologists that they hardly need an introduction here. The nocturnal birds of that region, however, have been very much neglected due to the extreme difficulties of night travel. Steep, rocky slopes, and much dense brush do not encourage activity at night. Fear is another discouraging factor, a fact seldom admitted. However, I have never known a man who did not show fear in some way when he suddenly found a rattlesnake within a few inches of his leg, or who felt perfectly comfortable in the presence of a growling lion which he could not see in the dark. Fear need not prevent one from accomplishing a given task but it does prey upon the nerves. The concentration necessary to interpret the slightest sound by ear, and at the same time keep an elusive owl within one's range of vision, noting its actions, and anticipating its movements, is no small drain upon one's nervous energy.

Since 1920, when I first became interested in the screech owls of the Huachuca Mountains, hundreds of trees have been climbed and many nights have been spent in the field in an endeavor to delineate their respective ranges and to learn something of their habits. This year fifty nights were spent in the field and some twenty square miles of country were worked. Considering the number of days and nights spent in the work, the results have been rather discouraging. However, I believe a summary covering my observations of the past ten years will be of some help to those interested in the two owls treated in this paper.

THE SPOTTED SCREECH OWL (*Otus trichopsis*)

Range.—The Spotted Screech Owl is a permanent resident in the Huachuca Mountains. Specimens were taken during February, 1923; March, 1923; April, 1930; May, 1926 and 1930; June, 1923 and 1930; October, 1922; December, 1925. This is evidently a bird of the Arizona white oak (*Quercus arizonica*) belt, and none was taken outside of this region, all having been secured between 5500 and 6500 feet elevations.

Food.—Black crickets, hairy caterpillars, moths, grasshoppers, large beetle larvae, and centipedes form the principal diet of the Spotted Screech Owl. Moth eggs, undoubtedly taken with the female moths, were found in two stomachs, and a large spider was found in another. Caterpillars and black crickets are staple articles of their diet the year round. Centipedes are taken more frequently during the winter months than during the summer. Practically every stomach examined during the colder months contained one or more small centipedes.

Calls.—The mating song or call of the male consists of about six rapidly delivered notes. These notes sound very much like *boo* or *boot*, and are delivered about as fast as a person can count: *boot-boot-boot-boot-boot*. The male may be heard calling a half mile or more away, but at times the call may be uttered so softly that the sound carries only a few feet. The female also gives the mating call in an emergency but at a higher pitch.

There are several alarm notes used by both the male and the female. A worried *chang* is most frequently given, especially by the female. A rather mournful *choo-you—coo-coo* is uttered when the owls are greatly disturbed. They also snap their

bills as other screech owls do. Both birds give clucking notes while courting, or when one or the other of the owls flies into a tree where its mate may be.

Habits.—The Spotted Screech Owl is seldom seen above thirty feet from the ground in any species of tree, and usually ranges below fifteen feet. The birds prefer the Arizona white oak to all other trees, but they were also observed to frequent the alligator-barked juniper, sycamore, Emory oak, mountain ash, and to some extent the walnut. The pine seems to be the least favored of the trees in the region, although it is not uncommon. I have only one record of a Spotted Screech Owl frequenting a pine. This was a small sapling, with its branches intermingled with those of a small white oak, and the owl retreated into it at my approach.

The plumage of the Spotted Screech Owl blends admirably with the bark of the Arizona white oak in daylight or at night. The owl during the day perches at times on a branch close to the trunk of the tree. In this situation, with its eyes closed and hiding the yellow iris, and stretched to its full height, it resembles the dead stub of a branch. This screech owl does not attempt to escape observation at night in this way, but when it is on a large limb, it fluffs out its feathers and leans forward in such a manner that it looks very much like a bulge on the limb. Occasionally, one will be seen perched near the end of a branch among the twigs. In this position, it inclines its body toward the end of the branch and closely resembles a cluster of leaves. Whether this posture is assumed to avoid detection, or is merely a position preparatory to flight, could not be determined, as, although the owls often hold this position for several minutes, they do not always fly.

The males usually call from the white oak trees, but the alligator-barked junipers also furnish favorite perches for this purpose. The perch from which a male calls is usually a dead stub of a branch, either horizontal or vertical, protected by branches above, but with a clear field below. It may perch near the trunk of the tree or out toward the end of a horizontal perch, but on the tip of a perpendicular one. The owl tilts forward each time it calls, and may call repeatedly for a half hour or more.

While the male is calling, the female is often near-by and frequently in the same tree as the male. However, she chooses a less conspicuous perch and is seldom seen unless disturbed. She may at times be located by her soft *chang* note.

Males answer each other's calls sometimes a half mile or more apart, but never more than two were heard calling at one time. If one of the calling birds is taken, the other will stop calling at the report of the gun; but they usually keep on calling if they are not shot at, even though the gun is fired. This was verified on several occasions, and I have come to the conclusion that their notes have more different meanings than they have been credited with.

The Spotted Screech Owl is attracted at night by the alarm notes of other owls. A pair of Elf Owls was very much disturbed at my approach. Their alarm notes attracted a pair of Spotted Screech Owls from quite a distance. The male screech owl gradually approached, calling at intervals, until he was within twenty yards of me. The female was seen shortly afterward a few yards from the position the male had taken.

The mating call is used by the female to attract a male during the nesting season, if some accident has befallen her mate. This statement is based on the actions of only one female, and should be verified before being applied to the species, although I believe it to be a universal practice. Under the circumstances, a full account of the actions of the birds involved seems desirable.

I was almost certain that a pair of Spotted Screech Owls was nesting in the vicinity of my camp, as the male had been heard several times during the month. Another male arrived one night and passed on, acting like the wandering males earlier in the season. About a week later the worried *choo-you—coo-coo* notes of the pair attracted my attention. Working carefully toward them, I realized that both birds were giving this call, and I was also surprised that both birds were coming toward me. The female gave the *chang* note almost continually, and gave the longer call only twice after the two birds were located. The male also gave the *chang* note a few times. He flew within a few yards of me, lit on a green limb of a white oak, well out near the end, and continued to call *choo-you—coo-coo*. The male was taken. The female did not call after the shot, but I was able to follow and watch her for a short time. Six nights later, a male giving the mating song was taken within seventy-five yards of the place where the pair had first been seen. The following night the mating call was again heard in the same locality, the owl calling about twenty yards from the place where the first male had been secured. Another owl was answering farther up the cañon, and it was noticed that the notes of the calling bird were higher pitched than those of the answering bird. Thinking the bird nearest me was a male, I shot it. This owl, however, proved to be a female in brooding condition. The external indications were verified later when the owl was sexed.

I believe that this female would have had three different mates during the week if she had not been killed.

The males thus attracted are probably year-old males, which have not mated and are wandering singly over the country. This statement is not based on this one instance only, as I had come to the conclusion earlier in the season that some males were wandering about, remaining in a locality for a night or two, and then moving on if they had not found mates. However, conclusions are not facts, and a great deal more work will have to be done before anything definite can be stated about these wandering males.

THE FLAMMULATED SCREECH OWL (*Otus flammeolus*)

Range.—The Flammulated Screech Owl nests from the crest of the Huachuca Mountains to well down into the foothills. A female taken June 5, 1922, at approximately 9000 feet, and another female secured May 19, 1926, at 5500 feet, both in brooding condition, indicate the extreme ranges of elevation at which I have found them. No specimens were taken during the winter months.

Food.—The food, as far as could be determined from the examination of stomach contents, consists entirely of insects.

Calls.—The mating song is composed of two notes: *boo-boot*. The second note is accentuated and louder than the first. This song is usually given at regular intervals so that it becomes monotonous. However, at times, when a bird's attention is attracted, the song may be uttered at irregular intervals. The *boo* note is then often dropped and the *boot* note given alone. At such times, this note may be considered by the birds as a note of warning. The mating song of the Flammulated Screech Owl is the most ventriloquial owl call I have ever heard.

The male, and I believe also the female, when apprehensive, utters a mewling note, very much like that of a kitten, and almost identical with a warning note of the Elf Owl. In courting, both birds make clucking noises, and upon rare occasions one of the birds (it was not determined which) utters a screech which with a little more volume would be "blood-curdling".

Habits.—The pine trees seem to furnish the favorite perches from which the Flammulated Screech owls call, and the Arizona white oak is a close second. They were also heard calling from sycamore, Emory oak, madroña and thick oak brush, having flown into the latter on several occasions when disturbed and continued to call. The owl, in calling from a pine tree, is usually to be found at about two-thirds the height of the tree, perched on a live limb near the trunk. In a white oak, the calling bird may be perched on the bulge of the trunk or near the trunk on a live limb, and at times well out near the twigs, but I have seen it only once on the dead stub of a branch. Usually, the Flammulated perches near the trunk of the tree from which he may be calling, and there may or may not be intervening branches between the bird and the ground.

In my experience, the Flammulated is the shyest of the screech owls at night, and is adept at keeping some obstruction between itself and the observer, although a given individual may not be consistent in this. It is greatly assisted in avoiding detection by the color of its plumage. The owl's back blends perfectly with the bark of the pine tree, and the markings of its underparts with that of the white oak at night, so that it is almost invisible when it is perched with its back toward the stem of the tree.

The screeching note of this owl was heard only twice, both times on the one night, April 14, 1930. The sky was so overcast that the outline of the mountains could not be seen against the sky. I had become lost in a dense oak flat, and was wondering which way to go, when a scream out of the darkness startled me. In a short time a Flammulated Screech Owl was heard calling in the general direction from which the screech had been heard. The pine tree, from which the owl was calling, was finally located, but the bird could not be seen. A few minutes later and while the owl was calling, clucking noises were heard, about twenty feet from the pine, in thick oak timber. The calling bird was seen to fly toward the sound and then there were more clucking noises produced by both of the owls. The screech immediately followed. There is no doubt that one or the other of the birds was the author of this unusual note.

Prescott, Arizona, August 7, 1930.

VARIATION IN COLOR OF MALE HOUSE FINCHES*

By HAROLD MICHENER and JOSEPHINE R. MICHENER

Descriptions of the California House Finch (*Carpodacus mexicanus frontalis*) are quite uniform in recognizing that orange occasionally takes the place of the typical red in the color of the males. Bailey⁽¹⁾, Hoffmann⁽²⁾, Dawson⁽³⁾ and Wyman⁽⁴⁾ all mention this in their descriptions of the species. The fact that the range in color is far wider than this is recognized, if not in the general literature on the subject, by all ornithologists and by many who are merely bird lovers.

As previously stated (Condor, XXVIII, 1926, p. 254), our banding work early led us to an interest in the color variation of this species, and, almost immediately, to the taking of notes on the color of each male House Finch. We soon felt this method cumbersome and inadequate, especially so because more than one person was engaged in the work, and notes on color, even by the same person, have a tendency to be extremely difficult to visualize at a later date.

It, therefore, was decided to preserve actual feathers for comparison and these were taken from the rump feathers, of which a few can be removed with apparently no discomfort to the bird. If the color on the head or chest varied from the rump, or if for any other reason a note on the coloring seemed desirable, these, together with the bird's number and the date, were written on the paper in which the feathers were wrapped. When a number of such samples had been collected they were transferred to sheets of paper, one for each bird represented by a feather sample. In addition, the date and band number of each sample was entered in a card index, and whenever a male linnet was captured a glance in the index told whether a sample had been taken during the previous three months. If not, a new one was taken.

For the purpose of studying the colors this method has both defects and advantages. The great advantage is that it permits the study of the same bird in different plumages under natural conditions, provided the bird returns one or more times with intervening molts. We have had one of these birds in six successive plumages, and since linnets are reported as always turning yellow in captivity, it seemed worth while to follow their colors in the wild state. This we have had an unusual opportunity to do because of the large number handled in our banding operations. A total of 1982 plumage samples collected from 1563 male House Finches, 337 of which are represented by samples for more than one year, is considered in the present study.

The defects of the method are that it compels the collection of a great quantity of material because it is never known which birds will return and that there is a possibility that plucked feathers will be replaced by new ones of a different color, which at the next capture would be plucked and cause confusion. However, we think that such evidence as we have indicates that replacement feathers are the same color as those replaced. We have more than fifty birds from which samples were taken more than once during a year; from some, five or six times, but in none of these has there been any reason to think that the color has been changed by the plucking. As a matter of fact, the same feathers were not sought for this study. The effort was only to get the color shown by the bird. We have one instance of a bird which was red, but a rather pale red, in November, returning in June with head and breast red and the entire rump yellow. We did wonder if this could

*Presented at the Annual Meeting of the Western Bird Banding Association, Claremont, California, June 7, 1930.

have been due to replacement following an injury, but we now feel that this could not have been the cause.

This House Finch returned to us for four years after he was found with these yellow feathers in June where pink feathers had been in November. The next year we have only one sample of his plumage taken in March. It is red, rather a light orange red, Carnelian according to Ridgway's Color Nomenclature, and a year later, in March, it is the same. The next year we have two samples, but close together, one in September and one in November, both of the same Carnelian red, and the last year's plumage was the same red in November, but in February there is much dull yellow mixed with it. Our notes say: "General effect more yellow than pink", so again this bird has turned to yellow in the spring. We have found in a number of cases that the earliest pink feathers in July or August have, in a month or two, turned more yellowish and this yellow tone is maintained for the year's plumage. We feel that this bird, in two of the five years for which we have records, offers the most pronounced case of this tendency in our records and that the change could not have been due to replacement.

Before comparing different plumages from year to year we wish to speak of the variation in a single year. There is frequent reference to this in the bird books. Bailey⁽⁵⁾ says the red areas are much brighter and deeper in summer than in winter. Dawson⁽³⁾ describes the male "in highest spring plumage". McGregor⁽⁶⁾ refers to the "indescribable lustre which is only ascribable to intensification or addition of pigment", and he refers to Keeler^(7, 8, 9), quoting "Many birds appear to become more brilliant in color as the breeding season approaches without either a molt or the wearing away of the tips of the feathers".

This is the most obvious change in the plumage during the year. We feel that it is not due to increased pigmentation. The new fall plumage may be of a soft rose, a most exquisite shade, and in spring the same bird certainly possesses the "indescribable lustre" of McGregor. Any dressmaker could immediately have described it as what one would get by removing the georgette or any fine, soft, pale grey veiling used as a covering for a shining satin, and that is what actually occurs. Despite the opinion of Keeler quoted above, the wear of the year gradually removes the barbles from the barbs at the ends of the feather leaving the glistening group of barbs without the filmy barbles and the spring plumage is at hand.*

There is another change in this summer plumage. While the color is intensified the areas of the colored patches are smaller. This has been apparent to us since we began banding. The red of the fall covers more surface than in June but is not so bright.

In studying this we used birds represented by three or four samples taken at intervals during the year. A typical example of this, and there are many, would be a bird from which we have samples for 1926-27 taken in August, October, November, January and April. These are red, but the January sample shows some brown mixed with the red and the April sample shows still more. The next year, from this same bird, we have samples taken in August, October, November, January and July, and again the January and July samples show admixtures of brown feathers. A large number of birds showed this but not to the same degree. Our first thought was that the brown represented feathers replacing former pluckings and that the new feathers, in these cases, had failed to develop the red pigmen-

*Since offering this paper for publication we have been referred to Joseph Grinnell's paper "The Linnet of the Hawaiian Islands: A Problem in Speciation" (12). From this we learn that our findings, in regard to the effect of wear in causing the brightening of the linnet's feathers, could have been better stated by referring to this paper of Dr. Grinnell's written nineteen years ago.

tion. But that these brown feathers are not replacement feathers and are simply the remains of former red ones is made apparent by a careful comparison with birds having yielded a single plumage sample taken in the spring or early summer. The colored barbs last after the barbules are worn off but they also begin to wear at the tips as the season advances and we have our birds growing duller and brighter at the same time by the same process. One red bird in our records is by this rendered brown as far as the rump feathers are concerned and one, yellow in November, is brown in March. The yellow ones naturally show this the most, but it is apparent in all colors though not to the same extent in all birds.

This brings us to another point. While wear is responsible for the greatest change it is variable in different birds and in the same bird in different years. Some retain beautiful feathers in a long and almost perfect condition practically until the molt. Others show a badly worn plumage by March with only the tips of a few rump feathers showing their earlier coloring although the head and chest are still bright. This abrasion is much more apparent after nesting, but the difference in wear is great and not all House Finches are in brilliant and beautiful plumage at nesting time, but the bright ones create such an impression that the observer has the feeling that they are more numerous than they actually are.

An accumulation of dirt also changes the appearance of many birds as the year advances. During a cold winter, smudging operations leave much that lasts a long time and during the winter of 1928-29 some of our linnets were almost black for a time. They frequently have the forehead much darkened by a gummy substance and some of these birds smell very noticeably of the sagebrush, although we are three miles from the nearest brush area.

We have had one bird which had the rump white. Its sex is not known and its only interest in this connection is in the very good evidence it gives of the color being changed late in the year by the accumulation of dirt. This bird was almost pure white in December but in June it was matched by Ridgway's mouse gray, just four shades darker.

We have been able to follow about fifty plumages from the first appearance of the colored feathers through a year, and it is of interest to note that nearly all of them show that from the very young feathers, not completely out of their sheaths, it is not possible to know just what color that linnet will be. Some birds almost maintain this color, but most show a distinct change soon after the first new feathers appear. Some, that give promise of being very bright, will be found one or two months later to have turned towards the orange tones and also to have turned darker. Most of the birds examined, however, show that the young feathers just emerging are duller and paler than they will be two months later. By January they are often a shade darker and this is perhaps due to dirt. In many birds, feathers taken from January on have a spotty appearance due to brown tips where some colored ends have worn off, although the brightening due to the wear becomes apparent.

This progressive change that takes place in the coloring of some birds during the year is quite minor compared with the change that often takes place from year to year with the acquisition of new feathers. To study this color change with different plumages we have samples for two or more years from 337 birds, the "year", in this case, being from molt to molt. Obviously, we have no complete records for a single bird from its first mature plumage to the extreme age for the species.

In the method used in this study four empirical divisions of the birds were made

according to the color changes which took place from year to year. These groups are: (1) birds which, in our records, maintain the same red color; (2) birds which add red to the original color, becoming red or, if already red, deeper red; (3) birds all red in our last record of them but showing a mixture of red and yellow or, in one case red and brown, in a previous plumage; and (4) a group of irregular colorings usually losing red, or at least which we cannot place in the above categories.

Our first group, then, contains all birds which for two or more plumages have maintained a uniform red color; the shade of red, however, varying in different individuals. In separating these, allowance was made for the change between fall and spring if one year's plumage was taken in the autumn and the next year represented by a spring sample. The feathers were, however, usually placed in this group without hesitation and a repetition of the process gave practically identical results. There were 179 red birds that showed no change in color for two or more years. These comprise:

150 represented by plumages of two years which are often, but not always, consecutive;

19 from which we have plumages for three years;

6 from which we have feathers representing four years;

4 which have maintained the same red for five years.

Thus over half of the 337 birds have maintained a red that is almost identical from year to year, as far as our records go.

The second group, comprising all birds which added red to their first color in our record and for which the last plumage sample is red, contains 120 birds and is divided as follows:

37 turned from yellow to red for 9 of which we have first adult plumages;

31 turned from orange to red for 13 of which we have first adult plumages;

18 turned from orange-pink to red for 9 of which we have first adult plumages;

30 turned from red to deeper red for 15 of which we have first adult plumages;

4 turned from brown to red for 1 of which we have first adult plumages.

Each of these subgroups, well defined in the main, yet contains a few birds which could be shifted to another subgroup because it is extremely difficult to decide just when yellow becomes orange or orange becomes orange-red, but we felt that the colors were sufficiently distinct in each subgroup to justify it for the purpose. Here again, in this main group, the final red is variable but the separation of this group rests on the addition of red to the first plumage sample. Sometimes the change from a pale, dull yellow to a deep, vivid red comes in one molt. Sometimes the change is to a pink-red and a later molt may maintain this pink-red or the color may deepen, but it does not, in any of this group, change toward the yellow portion of the spectrum nor maintain a yellow, orange or orange-pink for more than one year. In most cases the change is abrupt. The small subgroup changing from brown to red might almost be excluded, since only one bird in this subgroup started with a truly brown plumage. The others were obviously the remnants left after excessive wear. The subgroup is so small, however, that it is unimportant.

The third group consists of 17 birds that in our last record are all red but show a mixture of red and yellow in some former plumage or, in one case, a mixture of red and brown. Thirteen of these birds show the mixed feathers in the first plumage recorded. One, with a record for four years, shows the mixed colors in the second and third years. One, with three plumages, shows the mixed colors in the second. One shows mixed yellow and red in the first record and brown and

red in the second, but all red in the third. Another, the last of this group of 17, has a mixture of dull yellow and red in a sample taken in October, but a December sample shows none of the dull feathers and the next year's plumage is red. We believe the first sample for this bird shows the difference between the oldest and the most recently developed feathers of the new plumage rather than a mixed red and yellow, but it is a pronounced difference. Of these 17 birds we have first adult plumages for 6.

The fourth group consists of 21 birds, about 6 per cent of the 337 under discussion, for which we have not yet accounted. These either lost or failed to acquire red coloring, as follows:

COLOR OF PLUMAGE SAMPLES			
Number of birds	First	Second	Third
2	Red	Mixed red and orange	
8	Red	Orange	
1	Orange	Orange	
1	Orange-pink	Red	Pale red
1	Yellow	Red	Mixed orange and red
1	Yellow	Brown	
1	Red	Orange	Brown
1	Dull orange-pink	Dull orange-pink	
2	Yellow	Orange	
2	Orange	Deeper orange	

In addition to those tabulated above there is one bird which might be said to have kept its red color for five years if noted just after the molt but which shows yellow feathers in its rump at the latter part of two years, the first and the fifth.

This group is only a convenient pigeon-hole. Hardly two are alike. Five of them were in their first adult plumage.

There is, thus, a total of 316, or 94 per cent of the 337 birds for which we have plumage records for more than one year, that, as far as our records go, were red or turned red and 21, or 6 per cent, that lost red or failed to acquire red. Why were not all these birds red in all their plumages? Were the colors other than red confined to any particular age? The second question is partially answered by our records. Although our knowledge of the age of these birds is not complete we have shown under the second, third and fourth major groupings above that, of the 158 birds which were other than red in some plumage, 58, or 37 per cent, were known to be of the yellower tones in their first adult plumage.

In a further effort to study this problem we have at this point gone over all feather samples in our files for the birds which failed to return and for which we have only the plumage record for one year. We find 225 such birds in three years which show the colors which we have called yellow, orange or orange-pink. We know from our banding records that 39 per cent of these birds were in their first adult plumage when these samples were taken, since we had banded them as immatures and they had returned after the molt, or else they were captured at the time of their first molt. This gives almost exactly the same result as given by the birds represented by plumage samples for more than one year.

Combining all the birds that are other than red in any plumage we have 383, 42 per cent of which were in their first adult plumage and 7 per cent of which are known to be in the second or third adult plumage. This latter number consists of all the fourth group and three each from the second and third groups. A considerable portion of the remaining 51 per cent, whose ages are not known, are undoubtedly in their first adult plumage but were not in our traps before or during their first molt. This conclusion, that a large number of the birds of the lighter colors are

in their first adult plumage, is strengthened by our experiences in handling the same birds many times, sometimes hundreds of times, during several consecutive years. We have, coming to our traps at this time, birds that we have known through their first two years which have shown a color change from dull orange to red, and others, particularly one that is one of the most beautiful birds we have ever handled, which show no actual color change but in which the increase in extent of the red areas is marked. In the one cited this is so pronounced that the second adult plumage is much more brilliant in effect than the first, the red spreading the entire length of the back, on the flanks, under tail coverts, shoulders, and wing coverts, and we have wondered if the flight feathers do not show hints of it. The red is not remarkably bright in tone, however. Another bird has remained unchanged in color for five years and was in adult plumage when banded, so he must be at least five years old and for that long he has maintained a beautiful carmine red.

The color of any male House Finch becomes yellow in captivity (we are told that this change takes place after the second molt in captivity) and it thereafter remains yellow. This indicates a very quick response to conditions that are not normal, so that perhaps the retention of one shade for years is more remarkable than variation from it.

In this connection we wish to refer to Mr. Law's "The Role of the Runt"⁽¹⁰⁾ in which he points out the possibility that a young bird subjected to many hardships may fail to acquire full size and color. The lighter color of so many young linnets may be the result of parasitism by larvae of a fly which is common in our region. It is rather suggestive that sometimes the yellow linnets seem to occur in waves.

In an article by Mr. R. C. McGregor there is discussion of the color of this species and he quotes Mr. Charles A. Keeler and Dr. R. W. Shufeldt as holding the view that the yellow color probably preceded the red in the history of the bird in time and that the yellow is a more primitive stage than the red which has developed from the yellow. It is possible that both hard conditions of early life and recapitulation have a hand in these light colors of some of the young birds, but our feathers indicate that there is small chance that a light or dull colored bird will retain this color permanently or that a red one will not retain the red.

In studying the range of colors exhibited by the 1982 plumages we have collected we have used Ridgway's "Color Standards and Nomenclature"⁽¹¹⁾ as a basis for comparisons. The colored tips of the feathers were held together with a pair of forceps. This small spot of color was matched with a color on Ridgway's plates. It was rarely difficult to decide which color best matched the feathers under consideration.

The range of color is great. A single bird in the course of a year does not maintain a constant place on these plates. Even without the exactly graded color display of this book, a change is apparent as the year progresses. This has already been referred to and it is interesting to follow it in the light of these color plates.

In their brightest summer plumage a good many of the linnet's colors may be found on plates I, II, III, and IV. On plate I the colors chosen as matching House Finch colors are Scarlet Red, Scarlet, Carmine, Nopal Red, Brazil Red, Ox-blood Red, Garnet Brown and Morocco Red. Scarlet Red and Scarlet are the spectrum colors and all the other shades are produced by adding black to these two colors or to Spectrum Red, which is not represented by any House Finch we have. The spectrum colors are continued on plate II and named Grenadine Red, Flame Scarlet and Orange Chrome and these are all matched by the tips of pre-molt feathers. More

commonly these colors are darkened to English Red, Mars Orange and Orange Rufous. Sparingly the still darker shades, Mahogany Red, Burnt Sienna and Sanford's Brown, occur. A few are found that match the lightened spectrum colors of this plate, Grenadine, Bitter-sweet Orange and Salmon Orange, but these are represented by very few birds. The next plate, III, continues on down the spectrum with Cadmium Orange and Orange, but the pure spectrum colors of this page hardly occur in our House Finches although a very few were classified in this way. More were matched with the darkened shades of these colors, Xanthine Orange and Mars Yellow, but on the whole this page is little used. Turning to the next page, plate IV, we find the pure spectrum yellows occur in none of our House Finches, but the darkened shades of yellow, Analine Yellow and Sulphine Yellow and these further darkened to Orange Citrine and Citrine, are found. It is thus seen that the published descriptions of these birds as red and orange are right, since the yellow, while appearing very bright in the bird held in the hand, is not a pure yellow in any case we have found. All these colors, chosen from plates I to IV, were found on a good many birds, but not often except in samples of late spring and summer.

We have already spoken of the summer brightening as being due, in our opinion, mainly to abrasion. The loss of the filmy gray barbules is again apparent in studying the colors of the House Finch with Ridgway.

During a large part of the year plates I to IV do not match our linnets, but plates XIII to XVI are more useful. These plates correspond exactly with the preceding except that all the colors are dulled by the admixture of 32 per cent of Neutral Gray. On these pages are very good matching colors for most of our birds for most of the year. The bird that was classified as Scarlet in its June coloring became so by the loss of 32 per cent of Neutral Gray from Coral Red, its October and November color. One that was Nopal Red in June lost the 32 per cent of Neutral Gray that made it Pompeian Red in November or February. Changes in all birds do not correspond so exactly with this loss of Neutral Gray, but the use of this book illustrates that the bright summer color is due to a loss of Neutral Gray which is, we believe, due to the loss of the barbules. The presence of dirt, the absence of abrasion, or the opposite extreme makes many irregularities, but we feel that no one could go over our feathers with this book without coming to the conclusion that plates XIII to XVI are the ones that will match most House Finches most of the year.

However, for the first new feathers of the new plumage in late July and August, even these plates are too bright, and turning to plates XXVII to XXX, showing the colors further dulled, this time by an admixture of 58 per cent of Neutral Gray, we find many of the soft and lovely colors of the emerging feathers, although the brighter of these are found in the preceding plates, XIII to XVI. In a very few of the dullest new feathers, even the next addition of Neutral Gray to 77 per cent was found to give matching colors, but very rarely were the feathers this dull.

In conclusion we wish to summarize as follows:

A total of 1982 plumages from 1563 male House Finches was studied. Of the 337 males represented by plumages for more than one year, 179 maintained their red color, 120 added red to the plumages succeeding the first record, 17 were mixed red and yellow in some plumage but red eventually, 21 did not add red or did not retain the red existing in the earlier plumages.

Of the 1226 males represented by samples from only one plumage each, 1001 were red and 225 were not red.

Of the 383 males having plumages which were not red, 42 per cent are known to have been other than red in their first adult plumage, and 7 per cent are known to have been other than red in their second or third years. Undoubtedly a considerable portion of the remaining 51 per cent were in their first adult plumage.

The variation in the color of the plumage in a single year is chiefly due to wear. The reds become brighter as the filmy barbules are worn away and the extent of the colored areas decreases as the barbs wear off.

In matching plumage samples with colors in Ridgway's "Color Standards and Nomenclature" it is found that a very few of the dullest new feathers match the colors having 77 per cent of Neutral Gray, that the soft and lovely colors of the emerging feathers are matched by the colors having 58 per cent of Neutral Gray (plates XXVII to XXX), that the colors having 32 per cent of Neutral Gray (plates XIII to XVI) match most House Finches most of the year and that the colors on plates I to IV, which have no admixture of Neutral Gray, are the ones which match many of the linnets' brightest late spring and summer plumages. The loss of the barbules corresponds to the reduction of Neutral Gray in the standard colors and is the cause of the brightening of the red as the molting season approaches.

BIBLIOGRAPHY

1. Bailey, Florence Merriam. Handbook of Birds of the Western United States. Houghton Mifflin Company. 1902.
2. Hoffmann, Ralph. Birds of the Pacific States. Houghton Mifflin Company. 1927.
3. Dawson, W. L. The Birds of California. South Moulton Company. 1923.
4. Wyman, L. E., and Burnell, Elizabeth F. Field Book of Birds of the Southwestern United States. Houghton Mifflin Company. 1925.
5. Bailey, Florence Merriam. Birds of New Mexico. Published by the New Mexico Department of Game and Fish in cooperation with the State Game Protective Association and the Bureau of Biological Survey. 1928.
6. McGregor, R. C. Dichromatism in the Genus *Carpodacus*. Condor, III, 1901, p. 13.
7. Keeler, Charles A. Evolution of the Colors of North American Land Birds. Occasional Papers of the California Academy of Sciences, III. 1893.
8. Allen, J. A. Keeler on "Evolution of the Colors of North American Land Birds". Auk, x, 1893, pp. 189, 377.
9. Keeler, C. A. The Evolution of the Colors of the North American Land Birds—A Reply to Criticism. Auk, x, 1893, p. 373.
10. Law, J. Eugene. The Role of the Runt: A Taxonomic Problem. Condor, XXXI, 1929, p. 189.
11. Ridgway, Robert. Color Standards and Color Nomenclature. Published by the author. Washington, D. C. 1912.
12. Grinnell, J. The Linnets of the Hawaiian Islands: A Problem in Speciation. Univ. Calif. Publ. Zool., 7, 1911, pp. 179-195.

Pasadena, California, June 12, 1930.

CHARLES ANDREW ALLEN

WITH ONE ILLUSTRATION

By JOSEPH MAILLIARD

The passing of a man whose name, as collector, was on the labels of many specimens of birds and small mammals from California deserves attention, especially as these were collected in the last quarter of the past century, when the Pacific coast was yet a comparatively new and far from systematically explored region. Although not known from association with, or membership in, any ornithological organization, his name will long be prominent as being permanently connected with one of the friendliest of our exquisite Pacific Coast Hummingbirds, the Allen Hummingbird (*Selasphorus alleni* Henshaw).

Having been well acquainted with Allen for nearly sixty years, much of the time in close association with him, I beg leave to set forth the following facts concerning his life and his connection with the ornithological history of California.

On August 21, 1841, Charles Andrew Allen was born at Milton, Massachusetts. From his own account, the first few years of his life were uneventful, but his connection with ornithological matters commenced early; for one day, when he was about eleven years old, as he was walking along Nantasket Beach, Cape Cod, accompanying one James A. Gatly, a Boston taxidermist, he presented to that gentleman a bird that he found on the beach. Mr. Gatly identified this bird as a Cory Shearwater (*Puffinus borealis* Cory), took it home and made a mounted specimen of it, much to the joy of the boy, for whom this was the starting point of his interest in birds. Noticing the interest of the child, to whom he was really attached, Mr. Gatly constituted himself instructor to the boy, in bird lore and taxidermy.

On leaving school Allen worked for four years at carpentry, but enlisted in the First Massachusetts regiment early in the civil war, in which he served for two years. I do not recall, however, any mention of his having been under fire. Later, for eight years all together, he worked in the Baker Chocolate Mills, at Lowell, Massachusetts, on holidays and after work hours in summer evenings collecting and mounting specimens. After that period he was employed for some four years, off and on, in the planing mill of a furniture factory, but the dust so affected his lungs that he would lay off from time to time and work with Gatly until he felt better again.

Somewhere here he spent three years as a fisherman on the Grand Banks of Newfoundland, going to sea more to be familiar with the bird life there than for anything else.

Finally the dust in the planing mill so seriously affected his lungs that, early in 1873, he came to Los Angeles, California, staying there until June, collecting birds (and possibly small mammals), which he sent east to a man named Freeman. After an attack of whooping cough his health was so much worse that he almost concluded that he was tubercular; but in June of that year he made a visit to San Rafael, California, and stayed there for a few weeks, finally telling a friend that he was "going home [east] to die." His friend succeeded in laughing this idea out of his head, and soon after this Allen accepted a position as a sort of timber guard on the Miller Ranch, near Nicasio, Marin County, California, where he lived in a small cabin on the edge of the redwood forest. In 1870 he was married to Miss Abby F. Robie, of Dorchester, Massachusetts, and it was in this cabin that their first child, Jessie, was born. Two other daughters came later, Hattie and Ruth.

It was here, in the late '70's, that I first made Allen's acquaintance, through my brother, John W. Mailliard, who had become interested in birds and had taken some lessons in the preparation of specimens. Allen passed his time largely in collecting birds and small mammals for eastern people, of whose names he later recalled but a few, such as: Dr. C. Hart Merriam, of Washington, D. C.; Dr. Jonathan Dwight, Jr., of New York; William Brewster, of Cambridge, Massachusetts; Henry W. Henshaw, Washington, D. C.; Henry K. Coale, Chicago; and Charles K. Worthen, Warsaw, Illinois. There were others, but Allen himself could not recall



Fig. 2. CHARLES A. ALLEN, 1841-1930. PHOTOGRAPH TAKEN ABOUT 1895.

them the last time I asked him about them. Unfortunately he had recently destroyed practically all of his old correspondence and accounts, so that, in his later years, I was unable to get from him a list of those to whom he had disposed of his specimens. It was in 1877 that Allen called to Mr. Brewster's attention the differences in the tail feathers of some of the hummingbirds he was sending on from Nicasio, and suggested that there might be specific differences between these and the otherwise similar birds. Mr. Brewster agreed with him in this matter, but turned the specimens over to Henshaw, who decided that the idea was correct and described the Allen Hummingbird as distinct from the Rufous.

Somewhere in the '80's, Allen bought a small house situated not far from San Geronimo Station, on the edge of our Marin County property (Rancho San Geronimo) and a couple of miles from our family home. Here he pursued his vocation for many years, at times acting for us as fire guard and patrolman in the deer season and at other times often doing carpentry or other work for and with me. Many were the deer hunts and camps we had together, often with my brother and others accompanying us, and Allen certainly was a good and amusing camp mate.

This house was occupied by himself and family for over twenty years when, the whole ranch having changed hands, he bought a nearby lot from the new purchasers, built upon it and passed the rest of his life there. His vitality had latterly failed to such an extent that the last few years were passed in bed and the end came on June 29, 1930. His remains were cremated in Berkeley, California, at the Sunset Mausoleum.

California Academy of Sciences, San Francisco, California, September 8, 1930.

SOME FLOWERS VISITED BY BIRDS

By A. L. PICKENS

Audubon seems to have taken it for granted that the hummingbird secured sustenance from every species of flower, and this tendency to generalization on the part of older observers probably prevented more careful study of the ecological problem presented in the relation of birds and flowers. It would certainly require a long time to prove the statement of the noted painter-naturalist.

In the United States and Canada are probably fifteen thousand field and garden flowering plants without mentioning conifers, rushes, and grasses. Recorded visits to tassels of maize (*Zea mays*) and to heads of blue-grass (*Poa*?) are probably for insects or spider-web, and visits to showy heads of *Hydrangea hortensis* and *Eschscholtzia californica* are perhaps the experimental tests of young birds, comparable to the curiosity that leads them to scarlet tissue paper bells. Consultation of literature, correspondence and personal observation extending over a number of years have supplied me with less than 250 names of flowers really known to be visited by birds of the Nearctic region. A few appear to be specialized for transfer of pollen by birds. In the east all such tend to reds, oranges and goldens. Mr. Aretas A. Saunders notes ruby-throats at the orange jewel-weed more often than at the paler species. In the west, however, I believe some purples and even greens may be so specialized. From observations on woolly blue curls, and from a description of the hummingbird's manipulation of the flower given by Miss Helen Pratt, it would appear this flower has such a tendency.

Tendencies to local variation are interesting. Mr. Robert S. Woods notes a tendency to neglect roses on the part of hummers; Mrs. Lura Garrison found ruby-throats neglecting lantana in her garden and swarming about the same species at another four miles away. Abundance of food in nearby flowers of another kind may affect such variation. Nectar-sipping appears to be much more common in desert and semi-arid regions, and fourteen species other than hummers have been recorded so doing, nearly all like the verdin at *Astragalus preussii*, and others recorded by Mr. Gander and myself, being observed in southern California (Condor, xxxi, 1929, pp. 229 and 250).

One can eliminate the rose and pink hues from the present list, and reds will still be far in the lead. Just what part the naturalists' tendency to be attracted by red played we have no means of ascertaining; but even allowing for this would apparently leave a margin. Certain genera and families also show striking leads. Several showy flowers that are nectar-bearing have not been found in the records, and all such we are anxious to hear of, with notes as to the relative number of visits. Certain showy poppies and some other flowers bear only pollen and so lure birds, if at all, merely by the offerings of insects. The suggestion has been made that publication of this list will lead to sending in notices of other species not here named. The name, with any color variation that may occur, and the species of bird visiting the same should be recorded, with relative number of visits, and where there is doubt, a specimen of the plant. Particularly interesting is a summer record showing each visit of a species to a particular form and color of flower. Such a record certainly seems to indicate decided preferences on the birds' part.

PROTEACEAE: Silk oak, *Grevillea robusta*. Orange.

Grevillea thelemanniana. Rose.

LORANTHACEAE: *Loranthus* sp.

POLYGONACEAE: *Antigonon* sp.

- AMARANTHACEAE: Ragged sailor, *Amaranthus hypochondriacus*? Red; purple.
 NYCTAGINACEAE: Four-o'clock, *Mirabilis jalapa*. Red.
 CACTACEAE: *Cereus* sp. and *Opuntia* spp.
 CARYOPHYLLACEAE: Fire pink, *Silene virginica*. Crimson.
 Fire pink, *Silene californica*. Crimson.
 Indian pink, *Silene laciniata*. Crimson.
 Bouncing Bet, *Saponaria officinalis*. Pale pink.
 Carnation, *Dianthus caryophyllus*. Pink, etc.
 MAGNOLIACEAE: Tulip poplar, *Liriodendron tulipifera*. Yellowish.
 RANUNCULACEAE: Columbine, *Aquilegia canadensis*. Bright red.
 Columbine, *Aquilegia truncata*. Scarlet.
 Columbine, *Aquilegia vulgaris*. Blue.
 Red larkspur, *Delphinium cardinale*. Scarlet.
 Blue larkspur, *Delphinium elatum*. Deep blue.
 Western blue larkspur, *Delphinium scopulorum*. Blue; purple.
 Virgin's bower, *Clematis* sp.
 CRUCIFERAE: *Stanleya* sp. Golden.
 Collard, *Brassica oleracea*. Yellow.
 CAPPARIDACEAE: Spider flower, *Cleome* sp. Rose purple.
 VIOLACEAE: Pansy, *Viola tricolor*. Purple.
 PASSIFLORACEAE: Passion flower, *Passiflora incarnata*. Purple.
 BEGONIACEAE: Mountain chief, *Begonia coccinea*. Red.
 CRASSULACEAE: Rock leek, *Dudleya brauntoni*. Red and yellow.
 Rock leek, *Dudleya ovatifolia*. Yellow.
 SAXIFRAGACEAE: Escallonia, *Escallonia rubra*. Red.
 Western gooseberry, *Ribes divaricatum*. Purplish-green.
 Northern gooseberry, *Ribes oxycanthoides*. Greenish; white.
 Garnet gooseberry, *Ribes speciosum*. Bright red.
 Flowering currant, *Ribes sanguineum*. Reddish; white.
 Coral bells, *Heuchera sanguinea*. Red.
 ROSACEAE: Hawthorn, *Crataegus* sp. White.
 Japan quince, *Cydonia japonica*. Red.
 Pear, *Pyrus communis*. White.
 Apple, *Pyrus malus*. Pink and white.
 Crab apple, *Malus coronaria*. Pink.
 Raspberry, *Rubus idaeus*. White.
 Salmon berry, *Rubus spectabilis*. Red.
 Logan-berry, *Rubus vitifolius* hyb. White.
 Garden roses, *Rosa* spp. Various colors.
 Wild roses, *Rosa* spp. Pink.
 Apricot, *Prunus armeniaca*. Pinkish.
 Cherry, *Prunus cerasus*. White.
 LEGUMINOSAE: Silky tree, *Albizia julibrissin*. Pink.
 Silky tree, *Albizia montana*. Yellowish-green.
 Mesquite, *Prosopis* sp. Greenish-yellow.
 Sensitive briar, *Schrankia uncinata*. Pink.
 Lavender lupine, *Lupinus* sp. Lavender.
 Sweet pea, *Lathyrus odoratus*. Red; yellow; blue; white.
 Scarlet runner, *Phaseolus multiflorus*. Scarlet.
 Coral tree, *Erythrina christi-galli*. Brilliant red.
 Cherokee pea, *Erythrina herbacea*. Deep scarlet.
 Red clover, *Trifolium incarnatum*. Crimson.
 Wisteria, *Wisteria sinensis*. Blue-violet.
 Pea tree, *Caragana arborescens*. Yellow.
 Purple loco, *Astragalus preussii*. Purple.
 Red-bud, *Cercis* sp. Rose pink.
 Palo verde, *Cercidium torreyanum*. Yellow.
 Poinciana, *Caesalpinia* sp. Red and yellow.
 LYTHRACEAE: Lythrum, *Lythrum californicum*. Bright purple.
 Crepe myrtle, *Lagerstroemia indica*. Bright pink.

- MYRTACEAE: Bottle-brush, *Melaleuca hypericifolia*. Rich red.
 Sugar gum, *Eucalyptus corynocalyx*. Whitish.
 Red-flowered gum, *Eucalyptus ficifolia*. Crimson.
Eucalyptus sideroxylon rosea. Pinkish.
Eucalyptus globulus.
- ONAGRACEAE: California fuchsia, *Zauschneria californica*. Red.
 Fireweed, *Epilobium angustifolium*. Rose purple.
 Evening primrose, *Oenothera laciniata*. Yellow.
 Evening primrose, *Oenothera hookeri*. Yellow.
 Sundrops, *Kneiffia* spp. Yellow.
 Fuchsia, *Fuchsia magellanica*. Red and purple.
 Fuchsia, *Fuchsia speciosa*. Red and purple.
- FOUQUIERACEAE: Ocotillo, *Fouquieria splendens*. Scarlet.
- MALVACEAE: Red hibiscus, *Hibiscus coccineus*. Rose-red.
Hibiscus rosa-sinensis. Rose-red.
 Althea, *Hibiscus syriacus*. Rose; purple.
 Okra, *Hibiscus esculentus*. Yellow with red center.
 Hollyhock, *Althaea rosea*. Maroon, rose, etc.
 Cotton, *Gossypium hirsutum*. White, turning red.
 Maple fuchsia, *Abutilon megapotamicum*. Red and yellow.
 Red mallow, *Malvastrum coccineum*. Brick red; coppery.
- GERANIACEAE: Pelargonium, *Pelargonium inquinans*. Red.
 Pelargonium, *Pelargonium angulosum*. Red.
- ZYGOPHYLLACEAE: Creosote bush, *Larrea tridentata*. Yellow.
- TROPAEOLACEAE: Nasturtium, *Tropaeolum majus*. Orange; yellow; red.
- RUTACEAE: Orange, *Citrus aurantium*. White.
 Lemon, *Citrus limonia*. White.
- MELIACEAE: China tree, *Melia azedarach*. Lilac.
- SAPINDACEAE: Horse chestnut, *Aesculus hippocastanum*. Red and white.
 White buckeye, *Aesculus parviflora*. Pure white.
 Red buckeye, *Aesculus pavia*. Dark red.
 Ohio Buckeye, *Aesculus glabra*. Greenish-yellow.
- RHAMNACEAE: Mountain lilac, *Ceanothus thyrsiflorus*. Blue.
- CYRILLACEAE: Titi, *Cliftonia monophylla*. White; pinkish.
- BALSAMINACEAE: Touch-me-not, *Impatiens balsamina*. Rose.
 Jewel weed, *Impatiens fulva*. Orange.
 Sultana, *Impatiens sultani*. Scarlet, etc.
- PLUMBAGINACEAE: Leadwort, *Plumbago capensis*. Azure.
- ERICACEAE: High-bush blueberry, *Vaccinium corymbosum*. White; pale pink.
 Madroño, *Arbutus menziesii*. White.
 Manzanita, *Arctostaphylos manzanita*. Pinkish.
 Red heather, *Phyllodoce breweri*. Rose.
 Flame azalea, *Azalea lutea*. Orange; red.
 Pink azalea, *Azalea nudiflora*. Pink.
- CONVOLVULACEAE: Indian runner, *Quamoclit coccinea*. Scarlet.
 Cypress vine, *Quamoclit pinnata*. Scarlet.
 Morning glories, *Ipomoea purpurea*. Purple, etc.
- POLEMONIACEAE: Phlox, *Phlox paniculata*. Pink; purple.
 Gilia, *Gilia aggregata*. Scarlet.
- HYDROPHYLLACEAE: Nama, *Nama parryi*. Purple.
- BORAGINACEAE: Anachuita, *Cordia boissieri*. White with yellow center.
 Blue alkanet, *Anchusa officinalis*. Blue.
- SOLANACEAE: Petunia, *Petunia violacea*. Purple, pink, etc.
 Salpiglossis, *Salpiglossis sinuata*. Purple and yellow.
 Cestrum, *Cestrum elegans*. Deep red.
 Tree tobacco, *Nicotiana glauca*. Yellow.
Nicotiana paniculata. Green.
 Jamestown weed, *Datura stramonium*. White.
 Iochroma, *Iochroma tubulosum*. Deep blue.

SCROPHULARIACEAE: Snap-dragon, *Antirrhinum majus*. Red; purple; white.Pentstemons, *Pentstemon barbatus*. Carmine.*Pentstemon bridgesii*. Red.*Pentstemon cordifolius*. Scarlet.Beard-tongue, *Pentstemon hirsutus*. Purplish.*Pentstemon menziesii*. Blue-purple.*Pentstemon palmeri*. Creamy and purplish.*Pentstemon spectabilis*. Blue-purple.*Pentstemon ternatus*. Pale scarlet.*Pentstemon tubiflorus*. White chiefly.*Pentstemon*? (Ariz.). Vivid pink.*Pentstemon*? (Calif.). Maroon.Red scroph, *Scrophularia* sp. Red.Monkey flower, *Mimulus cardinalis*. Scarlet.*Mimulus langedorfii*. Yellow.Bush monkey flower, *Diplacus glutinosus*. Orange-buff.Fox-glove, *Digitalis purpurea*. Purple.Louse-worts, *Pedicularis densiflora*. Crimson.*Pedicularis* sp.? Greenish-yellow.Painted cups, *Castilleja coccinea*. Red.*Castilleja grinnelli*. Red.*Castilleja miniata*. Red.*Castilleja oblongifolia*. Red.Owl clover, *Orthocarpus purpurascens*. Crimson and varied.Spanish princess, *Macranthera lecontei*. Orange; yellow.Red Veronica, *Veronica speciosa*. Crimson-purple.BIGNONIACEAE: Cape honeysuckle, *Tecomaria capensis*. Scarlet.Trumpet creeper, *Campsis radicans*. Scarlet, and orange.Chinese trumpet, *Campsis chinensis*. Scarlet.Cross-vine, *Bignonia capreolata*. Red and yellow.Desert willow, *Chilopsis linearis*. White with pinkish.Catawba tree, *Catalpa catalpa*. White with purple.Yellow bignonia, *Tecoma stans*. Yellow.ACANTHACEAE: Orange honeysuckle, *Anisacanthus thurberi*. Orange.Chuparosa, *Beloperone californica*. Red.LABIATAE: Romero, or woolly blue curls, *Trichostema lanatum*. Purple.Bee-balms, *Monarda didyma*. Red.*Monarda*? (New Mex.). Pink.Hummingbird sage, *Salvia spathacea* (Ramona; Audibertia).
Crimson.White sage, *Salvia apiana* (Ramona polystachya). Lilac.Rabbit sage, *Salvia grahami*. Crimson.Crimson sage, *Salvia greggi*. Red.Rosy sage, *Salvia involucrata*. Rose.Violet sage, *Salvia leucantha*. Purple and white.Garden sage, *Salvia officinalis*. Purple; white.*Salvia pratensis*? Lilac; white.Scarlet sage, *Salvia splendens*. Scarlet.Wild sage, *Clinopodium coccinea*. Scarlet.Cat-mint, *Nepeta cataria*. Lilac; white.Lion's tail, *Leonitis leonurus*. Orange.Wound-wort, *Stachys albens*. Whitish.Mountain mint, *Pycnanthemum californicum*. Purple.*Monardella linoides*. Purple.Lavender, *Lavandula vera*. Purple.VERBENACEAE: Flame lantana, *Lantana camara*. Orange turning scarlet.*Lantana trifolia*. Rose lilac.Blue Vervain, *Verbena venosa*? Blue.LOGANIACEAE: Butterfly bushes, *Buddleia japonica*. Purple.*Buddleia variabilis*. Purple.Yellow Jasmine, *Gelsemium sempervirens*. Yellow.GENTIANACEAE: *Gentian* sp. Blue-purple.

- APOCYNACEAE: Oleander, *Nerium oleander*. Rose-red.
 ASCLEPIADACEAE: Butterfly weed, *Asclepias tuberosa*. Orange.
 Milkweed, *Asclepias* sp.
 Milkweed, *Asclepias cordifolia*. Purple.
 OLEACEAE: Persian Jessamine, *Jasminum officinale*. White.
 Shrub Jessamine, *Jasminum humile*. Yellow.
 Persian lilac, *Syringa persica*. Whitish; pale lilac.
 Common lilac, *Syringa vulgaris*. Lilac; purplish.
 RUBIACEAE: Bouvardia, *Bouvardia triphylla*. Bright scarlet.
 CAPRIFOLIACEAE: Weigela, *Diervilla hybrida*. Pink.
 Honeysuckles, *Lonicera japonica*. White turning yellow.
Lonicera involucrata. Yellowish; red tinge.
Lonicera tatarica. Crimson ("purple") and white.
Lonicera sempervirens. Scarlet.
 Snowberry, *Symphoricarpos albus*. Pinkish.
 Abelia, *Abelia grandiflora*? Pinkish.
 CUCURBITACEAE: Mexican cucumber, *Momordica balsamina*. Buff.
 CAMPANULACEAE: Cardinal flowers, *Lobelia cardinalis*. Cardinal.
Lobelia splendens. Cardinal.
 Venus' looking-glass, *Legouzia perfoliata*. Purple.
 Canterbury bells, *Campanula medium*. Violet-blue.
 MONOTROPACEAE: Snow-plant, *Sarcodes sanguinea*. Deep red.
 VALERIANACEAE: Spurred valerian, *Centranthus ruber*. Red.
 COMPOSITAE: Aster, *Callistephus chinensis*? Purple.
 Sun-flowers, *Helianthus annuus*, etc. Golden.
 Tar-weed, *Hemizonia*? Yellow?
 Marigold, *Tagetes erecta*. Yellow; orange.
 Coreopsis, *Coreopsis* sp. Yellow.
 Zinnia, *Zinnia elegans*. Yellow; red, etc.
 Dahlia, *Dahlia pinnata*. Red, etc.
 Swamp thistle, *Cirsium muticum*. Purple.
Cirsium californicum. Purple phase.
 Shasta Daisy, *Chrysanthemum maximum* X—? White.
 Corn blossom, *Centaurea cyanus*. Blue, etc.
 LILIACEAE: Orange day lily, *Hemerocallis fulva*. Orange.
 Yellow day lily, *Hemerocallis flava*. Lemon yellow.
 White day lily? *Hosta plantaginea*? Pure white.
 Aloes, *Aloe arborescens*. Red.
 Yucca, *Yucca* sp. White.
 African blue lily, *Agapanthus umbellatus*. Purple-blue.
 Easter lily, *Lilium harrissi*. White.
 Tiger lily, *Lilium humboldtii*. Orange-red.
Lilium tigrinum. Salmon-red.
 Swamp lily, *Lilium superbum*. Orange-scarlet.
 Tulip, *Tulipa gesneriana*, etc. Red and purple, etc.
 Giant Solomon seal, *Polygonatum commutatum*. Yellow-green.
 AMARYLLIDACEAE: Century plant, *Agave americana*. Greenish-yellow.
 Orange mesal, *Agave* sp. Orange-yellow?
 Amaryllis, *Amaryllis* sp.
 IRIDACEAE: Blue iris, *Iris missouriensis*. Bright lilac.
 Gladiolus, *Gladiolus gandavensis*. Red and yellow.
 Montbretia, *Tritonia pottsii*. Yellow tinged with red.
 MUSACEAE: Banana, *Musa* spp. Yellowish maroon.
 CANNACEAE: Canna, *Canna* spp. Red, etc.
 UNCLASSIFIED: (Scientific names lacking) Tree cypress. Scarlet.
 California wild hyacinth. Purple.
 Texas fragrant mountain laurel. Purple.
 Single pink japonica (Florida). Pink.
 Gulf-coast "sage brush".
 Great tree-trumpet.
 Squaw cabbage.
 Texas Fuchsia.

In checking scientific names, Bailey's "Standard Cyclopedia of Horticulture" (1914-17) has been used for species in cultivation and for northeastern species; Small's "Flora of the Southeastern United States" (1913) served for the area indicated where Bailey does not list the species; Jepson's "Flowering Plants of California" (1925) has been used for checking species in the Pacific region; while one or two species not given in either has been checked by the card files in the herbarium of the University of California. An equally small number from the works of well-known recent authorities have been left as they wrote them.

Available literature from Catesby to the present authors, including the files of our better-known ornithological journals, has been consulted; the bibliographic list would be longer than the floral list and must be omitted.

Valuable information has come in letters, chiefly in answer to the recent notice in the *Condor*. Among such I would mention those of M. E. Davidson, Lura Garrison, J. R. Pemberton, Helen Pratt, Cornelia C. Pringle, B. U. Reid, Aretas A. Saunders, and R. S. Woods. Others of later date with new records include Mrs. Jack Hagar and Katie M. Roads.

Zoology Department, University of California, February 12, 1930.

FROM FIELD AND STUDY

Nesting of the Piñon Jay in Oregon.—During the early spring months of the past few years, I had become interested in the great number of Piñon Jays (*Cyanocephalus cyanocephalus*) that occur in the juniper forests of western Deschutes County in central Oregon, but it was not until early April, 1930, that an opportunity presented itself to search for their nests.

Arrangements were then made to have an assistant with me on the ground by April 1. After going over the territory, we found the jays in considerable numbers and on April 5 located the first nest, then under construction, in a small yellow pine close to a road. During the same day, seven other nests, all in course of construction, were located in pine or juniper trees in the near vicinity of nest no. 1. These nests were all visited again on April 10, when they contained from one to three eggs each.

On April 9, a veritable colony of nests was found near the town of Grandview in the adjoining county of Jefferson. These nests were all in small junipers from three to seven feet above the ground. During our investigations we found over fifty nests of these birds, the great majority in juniper trees from three to eighteen feet up, while a few nests were found in yellow pine trees up to eighty-five feet. Nests were built on horizontal limbs or in thick twig growths and composed for the most part of dry twigs and coarse grasses and were lined with fine, dry grass, sheeps' wool and horse hair. The following notes taken verbatim from our notebook throws some light on the habits of these jays.

"Some of the Piñon Jay females, on being flushed from their sets of eggs, got clear out of the country and they did not come back under twenty minutes to half an hour. Two females were lifted off their eggs by me and these eggs were only slightly incubated. Still others came back into the nest tree and stayed close around, calling continually. At no time, did the male bird come in when the female called. The males usually fed in a large flock one-fourth to three-fourths of a mile distant, sometimes in one direction and again in another, from the nests. On coming in with food, a male usually perched on the top of a tree forty to fifty feet distant from the nest and called the female off to be fed. While being fed, she made a screeching series of calls similar to those of a young bird and continually fluttered her wings, and if the male flew to another tree, she followed, begging for more food. Having finished feeding, the male flew back to the feeding ground and the female flew directly to the nest, making it very easy to find. The feeding was closely observed and was solely by regurgitation, an unusual procedure for any of the crow or jay family. The female has a call given when near her nest, that closely resembles *krook, krook*. The male has a peculiar whistle-like note when one is near a completed nest and a very jay-like note when the female is disturbed from her nest."

To sum up, full sets contained three, four or five eggs each. Eggs collected April 10 to 14 were in full sets and were fresh. The Piñon Jay colonizes during the nesting season; sometimes three occupied nests were found in one tree.—J. C. BRALY, Portland, Oregon, September 24, 1930.

Wood Ibises Summering in San Diego County, California.—Appearances of the Wood Ibis (*Mycteria americana*) in the coastal region of southern California are sufficiently uncertain and irregular to warrant their being recorded. During the present summer (1930) these birds have been continuously present in Mission Valley, San Diego County, for several months. A flock of fourteen individuals was first observed there, feeding in a gravel pit in the bed of the San Diego River, in "late May" by R. E. Officer, a resident of Mission Valley, and reported to the Zoological Society of San Diego. The birds did not come to my notice until June 24, when I saw what was presumably the same flock of fourteen flying down the valley toward Mission Bay. On June 25, I observed several of the ibises circling over the houses in Old Town (North San Diego), apparently unconcerned by human population and the stream of automobile traffic. The same afternoon the entire flock settled at the edge of a small pool in Mission Valley plainly visible from my home. Here all fourteen remained at least until June 29, when I went away for several

weeks. During these four days the ibises were never seen to leave the little pool, which hardly seemed capable of providing sustenance for so many large birds. Many persons drove to the pool to watch the "cranes," the latter showing no alarm at their presence on the roadway close by.

Upon my return to San Diego in the middle of August, the Wood Ibises in Mission Valley were still being reported. The latest record which I received was of three birds on September 13, from Mrs. Belle R. Benchley of the Zoological Society of San Diego. These were in the same pool where the first birds were seen in May. Incidentally, all the occurrences of this flock were well within the city limits of San Diego and near built-up residential districts.

Other San Diego County observations of Wood Ibises this summer to come to my notice have been: 3 birds in a small pond near Ramona on June 26, by L. M. Huey, of the San Diego Society of Natural History; 2 birds in Chollas Canyon (eastern outskirts of the city of San Diego) about the end of August, by Webb Toms, Deputy State Fish and Game Commissioner; and the following by E. H. Glidden, Deputy U. S. Game Warden and Deputy State Fish and Game Commissioner: about 10 birds in the San Bernardo River near San Pasqual battlefield on August 6; 6 or 7 birds at Lake Hodges on August 6; 11 birds in the San Luis Rey River near Monserate on August 19; 15 birds at Lower Otay Lake on August 23. Mr. Glidden also stated that on August 28 he saw between 200 and 225 Wood Ibises five miles north of Calexico, Imperial County, California. These birds were feeding in a damp field and circling in the air above.

There has been no previous visitation of Wood Ibises in San Diego County, of which I have knowledge, since 1925. In the summer of that year a flock of about 100 birds came to Lake Hodges, from which five specimens were collected on August 11 for the San Diego Society of Natural History. The birds at that time displayed the same disregard for human beings that was noted this year. Also a large proportion of the individuals, both years, were immature.

Prior to this, I have the record of Thomas Weddle, rancher-naturalist of the Sweetwater River valley near Dehesa, who on August 30, 1923, saw "hundreds" of Wood Ibises at his home. On the day previous only 7 or 8 had arrived. The sight of the many supremely graceful white birds soaring above the river, and outlined against the mountains beyond, left an indelible impression on his mind.—CLINTON G. ABBOTT, *San Diego Society of Natural History, Balboa Park, San Diego, October 11, 1930.*

The House Sparrow and the Motor Car.—The great increase in the number of motor vehicles and the consequent disappearance of the horse has resulted, we are told, in a considerable diminution of the House Sparrow (*Passer domesticus*) population in our cities and towns. In view of this fact, while walking recently along the main street of Eastend I was interested to watch a hen sparrow procuring food for her young by picking grasshoppers off the radiator of one of the cars parked against the sidewalk.—LAURENCE B. POTTER, *Eastend, Saskatchewan, Canada, September 8, 1930.*

Pliocene Bird Remains from Santa Barbara, California.—Over one hundred species of birds have been found in fossil deposits in California. Of these, however, only two, each described from a single specimen, have been reported from the Pliocene: *Mancalla californiensis* Lucas, taken from a marine deposit at the site of the Third Street tunnel, Los Angeles, and *Branta howardae* Miller recently described from the Ricardo land laid beds in the Mohave Desert. Considering the scarcity of Pliocene bird remains, therefore, the discovery of additional specimens from this period is of particular interest and importance.

The first of the present specimens to come to the writer's attention, was collected in August, 1930, by Mr. A. M. Strong, a conchologist of Los Angeles, who donated this bone and two fragments of marine vertebrates, along with a number of marine mollusks, to the Los Angeles Museum. These specimens were all collected in an embankment at the foot of Victoria Street, Santa Barbara. According to Dr. U. S. Grant, Invertebrate Paleontologist at the Los Angeles Museum, this deposit is undoubtedly close to Arnold's Packard's Hill locality (Mem. Calif. Acad. Sci., 3, 1903, pp. 50-53) and may be definitely considered as uppermost Pliocene on the basis of its molluscan content.

The bird specimen is a small portion of the shaft of an ulna, the greatest diameter of which is 6 mm. There are four distinct papillae for the secondaries slightly to one side (probably external) of the ridge-like center of the anconal side, paralleled by another row of four, less distinct papillae on the opposite (internal) side of the anconal "ridge". Each papilla in this second (or internal) row appears to be slightly distal to the corresponding papilla in the more distinct (external) row. In the position of these papillae, as well as in the general contour of the bone, the specimen resembles the ulna of *Phalacrocorax auritus* or *Phalacrocorax penicillatus* in the region of the third, fourth, fifth and sixth papillae from the distal end. Comparisons were made, also, with the closely related genus *Sula*, as well as with various other groups. These comparisons only served to emphasize the similarity of the fossil with *Phalacrocorax*. Specific identification is, of course, impossible.

In September of this year, the author was privileged to examine two additional specimens of birds from the same deposit, belonging to the collection of the Santa Barbara Museum of Natural History. These specimens were loaned to the writer through the courtesy of the Director of the Museum, Mr. Ralph Hoffmann, and the Curator, Mr. David Banks Rogers. One of these bones is a fragment of the shaft of a humerus, the other a tarsometatarsus, badly worn and lacking the proximal articular surface as well as the internal distal trochlea. Both are unmistakably cormorant, though there was apparently no direct association of the bones in the matrix.

In general contour of the shaft, the humerus appears closer to *P. auritus* than to *P. penicillatus* as represented in the specimens at hand. However, it is unwise to attempt a specific identification of so small a fragment.

The tarsometatarsus appears to be that of a young individual, though it is difficult to be certain of the original texture of the bone, in view of its petrification and closely adhering, sandy matrix. However, this specimen does not have the firm texture of the humerus, or of the ulna collected by Mr. Strong, but appears roughened as in the incompletely ossified bones of young individuals.

In the character of the trochlea for digit 3, the tarsometatarsus resembles *P. penicillatus*; in this species, as well as in the fossil specimen, the trochlea has an abrupt proximal termination on the anterior side, with a small depression proximal to it. In *P. auritus* this depression either forms a continuation of the trochlea (in completely ossified bones) or is at least laterally bounded by its extended edges (in young, incompletely ossified bones) so that the trochlea does not appear to end abruptly. The prominence of the trochlea for digit 4 (another diagnostic character for separation of *P. penicillatus* and *P. auritus*) cannot be ascertained since this trochlea is well worn. As it stands, it is no more prominent than in *auritus*, but it is not unlikely that it may originally have been as prominent as in *penicillatus*.

The upper portion of the shaft is smoothly rounded and lacks the marked intermuscular lines found in adults of both *penicillatus* and *auritus*. In the young of these species, however, the lines are fainter. If the fossil specimen were of a young individual, as it seems reasonable to believe, the wear which the bone has evidently undergone since its deposition could have produced the rounded contour which the specimen now exhibits.

In anterior aspect the internal border of the shaft appears to project forward more prominently than in the modern species. Since the bone is broken at this critical point, it is impossible to be sure of the accuracy of this observation. Considering this fact, as well as the worn condition of the bone and its Pliocene occurrence, the specimen of tarsometatarsus, though seemingly similar to *P. penicillatus*, is only tentatively assigned to that species.—HILDEGARDE HOWARD, Los Angeles Museum, Los Angeles, California, October 15, 1930.

The Condor in San Benito County, California.—There is in the possession of Mr. B. F. Bacon, Pinnacles P. O., San Benito County, an egg of the California Condor (*Gymnogyps californianus*) taken by him from a cavity among the Pinnacles April 6, 1898. Mr. Bacon, who has lived in the region for many years, informs me that the Condor was common there in the early eighties, but that it gradually decreased in numbers, finally disappearing altogether. The last bird noted by him in the locality was seen about the year 1900.—G. WILLETT, Los Angeles Museum, Los Angeles, California, September 30, 1930.

The California Condor in Nevada.—A complete ulna of the California Condor (*Gymnogyps californianus*) was lately placed in my hands for identification. It was taken during the excavation of Gypsum Cave just out of Las Vegas, Nevada, by parties from the Southwest Museum and California Institute of Technology. Dr. Chester Stock reported on the mammal fauna of the cavern before the National Academy of Sciences (Science, LXXII, no. 1868, October 17, 1930, p. 405) and discussed this mammal fauna, which includes horse, bison, camel, ground sloth, and human artifacts. The Condor bone was not immediately associated with these mammals and the degree of its antiquity is uncertain. It is perhaps not fossil, but it is doubtless several centuries old since there has been a considerable degree of mineralization of the bone.

Mr. W. Lee Chambers has gathered a large mass of data on the Condor in historical times which will, I hope, be soon put on record. The present record is, so far as we can learn, the first report of the species from Nevada.—LOYE MILLER, *University of California at Los Angeles, November 3, 1930.*

Observations on the Incubation and the Care of the Young in the Jacana.—Pickwell (Auk, XXIV, 1930, p. 504), writing on incubation in the Killdeer, has commented on the lack of data concerning the participation of the sexes of shore-birds in the duties of incubation. In this article he includes the Mexican Jacana in a list of shore-birds for which insufficient or no data are available relative to the performance of incubation and the care of the young.

In the summer of 1925, I had opportunity to collect and observe breeding Jacanas (*Jacana spinosa*) at Lake Olomega, Salvador, Central America. My notes taken at the time appear to supply some pertinent information as to the relation of the sexes in this species; a digest of these notes is presented here.

On July 29 a visit to the north side of the lake revealed the presence of a large colony of Jacanas nesting on the low floating vegetation that extended about one hundred yards off-shore. The water beneath the vegetation averaged approximately two and one-half feet in depth. Adult birds were scattered about over the marsh, but a flock of immature and fully grown juvenal birds was noted along the shore. Male and female Jacanas could be distinguished readily in the field by the difference in their sizes, the males being the smaller. Males that were shot showed brood patches on the breast. Unfortunately, no notice was taken of the presence or absence of brood patches in females. The adults were extremely noisy and stood in pairs or groups of three or four, chattering and extending and fluttering their yellow-lined wings above their backs in a most spectacular fashion. Several birds were seen to engage in "broken wing" antics. In one instance I observed two females in pursuit of a single small male. In general the females seemed to be more aggressive in courtship than were the males.

On August 1, a return to the same marsh led to the discovery of seven sets of Jacana eggs in varying stages of incubation. The nests each consisted of a damp pad of the surrounding water plants that grew no more than two inches above the surface of the water. Only on close inspection could it be determined that the natural growth of plants had been thickened slightly, sufficient to support the eggs (see fig. 3). As a consequence of this and of the dark color of the eggs, nests were surprisingly difficult to locate. On first entering the marsh a male Jacana with several small young was seen running across the surface of the vegetation. As I approached within about thirty yards he left the young and commenced flapping and fluttering among the water plants. The young at once disappeared from view. After a thorough search two of the young were found in a thick clump of vegetation. They were submerged in the water with only their bills and the tops of their heads showing above the surface. Judging from their size they had been hatched only a few hours previously, yet they could run swiftly on the floating plants with their large well-developed feet. The only female in the immediate vicinity of this brood evinced no interest in the young and made no demonstrations such as those given by the male. It was my belief, as expressed at the time, that the male performed all of the "nest duties."

At a still later visit to the Jacana colony on August 8, seven additional sets of eggs were taken and as many more sets were left untouched because of advanced incubation. Most of the sets consisted of four eggs, although three complete sets

of three eggs were noted. During this visit it was found that by watching the marsh at a distance of from fifty to seventy-five yards Jacanas could be seen to appear suddenly out of apparently uninhabited patches of water plants, whereupon they quietly ran or sneaked with lowered head away from the point of first appearance. Almost invariably eggs could be found near the point where the birds first came into sight. The sneak from the nest usually was at an oblique angle to the line of my approach. After reaching a distance of about twenty yards from the nests the birds began to chatter and show alarm. The demonstrations indulged in by these incubating birds were much less frantic than the demonstrations of birds accompanied by young.

Locating nests in the manner described made possible the identification of the sex of the birds engaged in incubation. In all cases it was the male bird that was



Fig. 3. NEST AND SET OF FOUR EGGS OF *Jacana spinosa*, LAKE OLOMEGA, SALVADOR, CENTRAL AMERICA; PHOTOGRAPHED AUGUST 8, 1925.

flushed from the nest. In some instances the females were near-by but they were little disturbed by an intruder at the nest. It was my impression that females were more often seen about nests containing fresh or slightly incubated eggs than about nests with heavily incubated eggs or where there were young. On this day "broken wing" antics were seen only in cases where the eggs were hatching or where young were following the male parent.

It is fairly clear to me, therefore, that the male *Jacana spinosa* performs most if not all of the incubation. The males also care for the young. Females take relatively little interest in eggs and young, although they may be present in the vicinity of the nest. Females are decidedly active in courtship. The reversal of the customary sex behavior of birds probably is as complete in this species of Jacana as in the Killdeer.—ALDEN H. MILLER, Museum of Vertebrate Zoology, Berkeley, California, October 27, 1930.

Late Nesting of the Black Phoebe.—On September 28, 1930, while enjoying a delightful outing on Eel River, near Benbow, Humboldt County, California, I found a pair of Black Phoebes (*Sayornis nigricans*) feeding young. The nest was located about eight feet up, on a rafter in a tumbled down shack. It was the usual nest of mud, reinforced with hair and dry grass, lined with fine dry grass, coarse hair and feathers.

Incidentally, I might mention that I saw two American Egrets (*Casmerodius albus egretta*) flying up the same river. Identification was possible by reason of the large size of the birds. They resembled the Great Blue Heron in size, though they were slightly smaller. Inhabitants informed me that they saw as many as five and six of the birds in the same locality, while local newspapers reported "large white cranes" in several places in Humboldt County.—J. THOMAS FRASER, JR., *Eureka, California, October 11, 1930.*

The American Egret in the Lower Sacramento Valley, California.—Since moving to Davis, in July, 1923, I have been especially interested in the numbers of the American Egret (*Casmerodius albus egretta*) to be seen in this region. My notes are admittedly fragmentary, since observations are not made with any degree of regularity, yet they seem to indicate that the species is "coming back".

The principal opportunities for observation have been in going from Davis to Sacramento by automobile or train across the Yolo Basin, by train across the Suisun marshes toward Carquinez Strait, and on occasional automobile trips through irrigated areas in the neighborhood of the Marysville Buttes. Altogether there are 25 entries in my notes for Egrets, since July 1, 1923. Six of these are by other persons; all of my own records have been checked whenever possible by size comparison with the ever-present Great Blue Heron, and at least some of the observations by others have similarly been checked. The smaller Snowy Egret does occur, as a recent record by Mr. J. A. Neff indicates, but the records given here are all believed to pertain to the American Egret. The notes, in summary, are as follows.

October 13 and 25, 1924: One bird on marsh near Teal Station southwest of Suisun.

April 6, 7, 10, and June 10, 1925: One to seven under Yolo Causeway, east of Davis.

March 5, 6, 7, 17, and April 9, 1926: One to 28 (March 6) under Yolo Causeway.

April 12, 1927: Two under Yolo Causeway.

May 13, 19, and July 11, 1928: One on each date under Yolo Causeway.

March 2, 1929: Four, in Sutter By-Pass, southwest of Marysville.

March 3, 1929: About 15 on marshes west of Marysville Buttes.

March 9, 1929: One on marsh southwest of Suisun.

January 20, 1930: Not less than 30 on marshes southwest of Suisun.

January 30, 1930: At least 15 on marshes southwest of Suisun.

March 7, 1930: At least 15 on marshes southwest of Suisun.

March 28, 1930: Five on marshes southwest of Suisun.

September 20-21, 1930: A total of 26, in rice fields east and west of Marysville Buttes.

October 12, 1930: "Nearly a hundred", in rice fields near Maxwell (J. H. Woodward).

October 15, 1930: "Close to 100", northeast of Marysville (J. A. Neff).

Mr. J. W. Marshall, long a resident of Yolo County, has told me that during his boyhood days in the late '70's or early '80's, white herons nested "by the hundreds" in groves of trees then standing along the banks of Putah Creek, between the present site of the University Farm and the present Dixon-Woodland highway. At that time the area bordering the creek was subject to periodic overflow and hence supported more riparian growth than at present. Mr. Thomas F. Tavernetti reports that a few white herons used to frequent trees along Putah Creek, immediately southeast of Davis, as late as about 1912. I have no means of knowing whether these records pertain to the larger or smaller species.

The changes in water relations in the Sacramento Valley in past years, putting winter flood waters under control and limiting the amount of water which spreads out to form "swamp and overflow lands", has affected aquatic and palustrine species

adversely by limiting the extent of their appropriate habitats; the egrets are one group so affected. Plume-hunters decimated these birds before they were extended legal protection. Now, even under adverse environmental conditions, it would seem as though the larger egret is increasing somewhat.—TRACY I. STORER, *University of California, Davis, California, October 27, 1930.*

Early Record of Birds in Arizona and New Mexico.—In a translation¹ of an account of the Espejo expedition of 1582-1583, which has been brought to my attention by Mr. Neil M. Judd, there is mention (p. 106) of an occurrence of parrots that is of some interest to ornithologists. In May, 1583, the Espejo party was in the Flagstaff region in Arizona and on May 5 descended a rough ravine "to a fine large river which runs from northwest to southeast. At this place the river is surrounded by an abundance of grape-vines, many walnut and other trees. It is a warm land in which there are parrots." The translators suppose the stream was Sycamore Creek (though it seems possible also that it may have been Oak Creek).

Accepting the identification of "parrots" as correct, which is borne out by the fact that they seem to have been an unusual sight as there is no mention of them elsewhere in the narrative, then it seems reasonable to suppose that we may have here early reference to the Thick-billed Parrot (*Rhynchopsitta pachyrhyncha*) at a point much farther north than it has been known in more recent years.

There is interest also in the frequent mention of turkeys brought to the party by the Indians, note of this beginning February 1, 1582, on the Rio Grande in the general region of San Marcial and continuing through their travels to Acoma, Zuñi, the Flagstaff region, and back again into New Mexico. North of Albuquerque at the Pueblo of "Ziaquebos", said to be Sia, the journal speaks of blankets of turkey feathers worn by women. In April there is casual mention of women and children tending flocks in the mountains which the translators suppose to mean flocks of turkeys.—ALEXANDER WETMORE, *United States National Museum, Washington, D. C., September 11, 1930.*

Concerning some Western Races of *Polioptila melanura*.—In connection with recent work on Sonora birds it has been necessary to examine critically series of black-tailed gnatcatchers from practically all sections of the range of this species. The results of such examination have indicated the desirability of reconsidering the Lower California forms and of discriminating a western race as distinct from that occurring in the lower Rio Grande Valley of Texas and northeastern Mexico.

Dr. Joseph Grinnell has recently (Proc. Calif. Acad. Sci., 4th ser., 15, 1926, pp. 493-500) reviewed the gnatcatchers of the Californias. He has shown the necessity for reducing *Polioptila californica* Brewster to subspecific status because of the presence of a transitional form connecting *californica* with the race found in the Cape Region, which latter is clearly a subspecies of *Polioptila melanura*. While I agree absolutely with Dr. Grinnell in the number of races to be found in Lower California and in the characters which he gives for distinguishing them, I most emphatically do not agree on certain details of ranges. Unfortunately a change of names thereby becomes necessary. The situation focuses on the Magdalena Bay birds which Ridgway (Birds of North and Middle America, pt. 3, 1909, p. 733, footnote) named *Polioptila margaritae*. The two specimens on which the name was based were, as Grinnell has pointed out, skinned from alcohol and the colors thereby rendered unreliable for subspecific comparison. The measurements, of course, were not affected.

I have recently had the opportunity of collecting small but representative series of gnatcatchers at various points along both coasts of Lower California, including the all-important Margarita Island in Magdalena Bay. The six specimens secured at Margarita Island by myself and other members of the party I am unable to distinguish on any basis from specimens from Cape San Lucas, La Paz and Espiritu Santo Island, while all of them differ decidedly from the gnatcatchers of the middle

¹ Expedition into New Mexico made by Antonio de Espejo 1582-1583 as revealed in the Journal of Diego Pérez de Lúxan, a member of the Party. Translated by George Peter Hammond and Agapito Rey, The Quivira Society, Los Angeles, 1929.

² Contribution from the California Institute of Technology, Pasadena.

Subsp. nov. → peninsula, not only in color but in size. In other words Grinnell's *Poliophtila melanura abbreviata* (*ibid.*, p. 497) described from Cape San Lucas appears to be a synonym of *Poliophtila melanura margaritae*. The transitional form of the middle section of the peninsula must consequently be renamed, which I hereby do as *Poliophtila melanura nelsoni*, with the type a breeding male adult, number 30127, collection of Donald R. Dickey; San Francisquito Bay, latitude 28° 26' N., Gulf coast of Lower California, Mexico, April 5, 1930; collected by A. J. van Rossem; original number 12841. Measurements of the type in millimeters are: wing, 46; tail, 50; exposed culmen, 10.5; tarsus, 16.5; middle toe minus claw, 8.7. In color and size *nelsoni* is intermediate between *margaritae* of the Cape Region and *californica* of southwestern California and northwestern Lower California. The Cape race, *margaritae*, is the shortest tailed of all the known forms of *Poliophtila melanura* and measures in that particular about 46 mm. The agreement in size between Cape and Magdalena Bay specimens is well shown in Grinnell's review to which the reader is referred for a general treatment of the subject.

The distribution of black-tailed gnatcatchers is probably continuous down the peninsula, but determination of the meeting place of *margaritae* and *nelsoni* must await further field work. Specimens of *nelsoni* are at hand from San Francisquito Bay, Santa Teresa Bay, Santa Ana Bay, Santa Rosalia, San Lucas and San Bruno on the Gulf side, from San Ignacio in the interior and from Port San Bartolomé on the Pacific.

In naming the central Lower California race for Dr. E. W. Nelson I am prompted not only by appreciation of his Lower California work, but also by the fact that he previously and with different material had reached exactly the conclusion expressed above, and generously waived his prior rights in my favor.

The black-tailed gnatcatchers of the deserts of the southwestern United States and northwestern Mexico have been generally referred to *Poliophtila melanura* Lawrence, the type locality of which is Rio Grande in southeastern Texas. Through the kindness of the American Museum of Natural History there is before me a series of 12 examples of *melanura* from the general vicinity of the type locality, in fact seven are actual topotypes. The relative color differences between this series and another of 46 specimens from southeastern California, northern and central Sonora, and southern Arizona are seen to parallel those shown by *Auriparus flaviceps*, *Toxostoma curvirostre* and *Amphispiza bilineata*, the distributions of which are more or less coextensive with that of *Poliophtila melanura*. The characters of the western race are best developed in central Sonora, and therefore the type of the western form, here designated as *Poliophtila melanura lucida*, is selected from that region. It is a breeding adult male, number 30390, collection of Donald R. Dickey; collected 10 miles north of Guaymas, Sonora, Mexico; May 9, 1930; by A. J. van Rossem; original number 13107. Compared with *Poliophtila melanura melanura* of the Lower Rio Grande Valley, *lucida* is slightly smaller in all dimensions and the bill is notably smaller; in color it is decidedly paler below (often nearly white medially) and the flanks are very much paler and less extensively gray. Females and young males of *lucida* also lack much of the brown wash seen in the corresponding plumages of *melanura*. Measurements of the type in millimeters are: wing, 44; tail, 48; exposed culmen, 9.4; tarsus, 15.9; middle toe minus claw, 7.8.

Specimens from California and Arizona are, while not so extreme as the Sonora birds, nevertheless decidedly closer to *lucida* than to *melanura*, which latter appears to be confined to the Atlantic drainage.—A. J. VAN ROSSEM, Pasadena, California, October 31, 1930.

Three Note-worthy Bird Records from Barrow, Alaska.—During the past seven years the bird collection of the San Diego Society of Natural History has been augmented from time to time through the generosity of Charles D. Brower of Barrow, Alaska. Barrow is the most northerly inhabited point on the American continent, and it has received its share of ornithological attention. The most thorough report made in recent years on the birds of northwestern Alaska (including a trip to Barrow) is that of Alfred M. Bailey, published in the *Condor* during 1925 and 1926. Bailey includes the three following species on his list, but their capture at Barrow extends their known ranges and seems worthy of record. Unfortunately on some of the speci-

mens pertinent data were lacking, such as sex and date, but the locality was always correctly stated. The birds, which were among many sent by Mr. Brower, are:

Kitlitz Murrelet (*Brachyramphus brevirostris*), Barrow, Alaska; collected September 27, 1929. (S. D. S. N. H. no. 13,271.)

Golden Eagle (*Aquila chrysaetos*), Barrow, Alaska; no date. (S. D. S. N. H. no. 13,303, received February, 1930.)

Gambel Sparrow (*Zonotrichia leucophrys gambelii*), female; Barrow, Alaska; collected June 4, 1928. (S. D. S. N. H. no. 13,449.)—LAURENCE M. HUEY, *San Diego Society of Natural History, Balboa Park, San Diego, California, September 22, 1930.*

The Type Locality of the California Quail.—George Shaw and Francis P. Nodder were the first formally to name the California Quail. This they did in the *Naturalist's Miscellany*, volume 9, 1797 [1798], plate 345 and accompanying text, calling the bird *Tetrao californicus*. They state that "This curious bird is a native of California, and was brought over [to England] by Mr. Archibald Menzies, who accompanied Captain Vancouver in his late expedition. The specimen from which the present figure was taken is in the British Museum." This type specimen is not now there—probably long ago destroyed (see Sharpe, in *Hist. Colls. Nat. Hist. Depts. British Mus.*, vol. 2, 1906, pp. 79 ff).

As to the subspecific application of the name *californicus*, the plate referred to is inaccurate in so many respects—color tones, patterns, proportions—as to have no significance. The accompanying text says, selecting only those phrases which might help in subspecific determination: "Lead-coloured Quail, with upright vertical crest; the throat (of the male) black edged with white, the abdomen yellowish-brown with black crescents. . . . Its general tinge is blueish-cinereous or dove-coloured . . . ; the wings are of an earthy or dull brown . . .". There is nothing here to clinch the application of the name as between the brown backed humid-coast race and the grayish backed interior race unless, but only by a slight margin, to exclude the former.

The reading of Vancouver's *Voyage of Discovery* (1798, 3 vols.) leaves us with the conclusion that the type in question was obtained at either San Francisco or Monterey, though with no guidance as to which should be chosen as the type locality. But fortunately Menzies' journal, recently published (Eastwood, *Calif. Hist. Soc. Quart.*, vol. 2, 1924, pp. 265-340), provides the deciding evidence. Under date December 5, 1792, Menzies records (*loc. cit.*, p. 286) strolling out from the Presidio (of Monterey) "towards Punta de Pinos" and seeing, besides many plants of interest to him, a "great variety of the feathered Tribe, many of which were also new, among these" being a "species of Quail of a dark lead colour", etc. Farther down on the same page Menzies says: "The two following days I remained on board [the ship *Discovery*] examining drawing & describing my little collection & such other objects of natural history as were brought me by the different parties [from the ship] who traversed the Country . . .".

The type locality of the California Quail can thus now be stated positively as Monterey, California. But, the quail of the neighborhood of Monterey are not of the humid coast-belt race, as has generally been supposed until now; they are definitely of the interior race. The name *vallicola* of Ridgway thus falls as a synonym of *californica*, using the latter name now in the subspecific sense. Indeed, I am unable to see any material differences between fresh-plumaged Monterey birds and similarly plumaged birds from the upper Sacramento Valley. Shaw and Nodder's name must thus henceforth apply to what we have been calling *vallicola*.

As for the brown-backed race of the narrow humid-coastal strip from Santa Cruz County northward, an available name is *Lophortyx californicus brunescens* of Ridgway (*Proc. Biol. Soc. Wash.*, vol. 2, 1884, p. 94). The type specimen here concerned is in the United States National Museum and, through the courtesy of Dr. Alexander Wetmore, I have just had the opportunity of studying it. While supposed to have been taken by J. K. Townsend at Santa Barbara, the label having probably been inscribed by Baird in accordance with the statement made by Audubon (*Birds Amer.*, vol. 5, 1842, p. 67), this type could not, because of the subspecific characters it shows, have come from Santa Barbara. Nor could it have come from the Columbia River, as suggested by Ridgway (*loc. cit.*); nor, indeed, could it have been collected by J. K. Townsend at all, as I shall set forth in another connection.

Briefly, the type of Ridgway's *brunnescens* falls in accurately with skins from the San Francisco Bay region; and for various reasons its locality can now safely be fixed as San Francisco. By this decision the quail of this group as represented in California may now be listed as follows.

1. *Lophortyx californica californica* (Shaw and Nodder). Valley California Quail.
2. *Lophortyx californica brunnescens* Ridgway. Coastal California Quail.
3. *Lophortyx californica catalinensis* Grinnell. Santa Catalina Island California Quail.

—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, November 29, 1930.*

Nevada Savannah Sparrow Breeds in Yellowstone.—There has been considerable difference of opinion regarding the subspecies of Savannah sparrow which breeds in Yellowstone National Park. In order definitely to settle this question, the writer on June 17, 1930, collected a brooding female, together with her nest and four eggs, near Junction Butte in the lower Lamar River Valley. The plant association at this locality consists for the most part of true sage (*Artemisia tridentata*), with a sprinkling of lodgepole pines on the ridges and isolated clumps of aspens and willows in the moist meadows. The nest was placed on the ground in a dense growth of fine grass which formed a narrow belt along the shore of a small lake. The specimen, together with the nest and eggs, has been deposited in the Museum of Vertebrate Zoology at the University of California and has been identified by Dr. Joseph Grinnell as typical *Passerculus sandwichensis nevadensis*.—JOSEPH DIXON, 405 American Trust Building, Berkeley, California, September 18, 1930.

Four Hundred Black-necked Stilts.—As my experience with the Black-necked Stilt (*Himantopus mexicanus*) as a migrant has been only casual, and with few birds at a time, I was interested to learn from E. H. Glidden, Deputy United States Game Warden and Deputy State Fish and Game Commissioner, whose home is in San Diego, that on August 29, 1930, he saw a flock of Black-necked Stilts which he estimated to contain not less than 400 individuals. The locality was nine miles north-east of Calexico, Imperial County, California, and the stilts were "feeding on insects" in a recently irrigated field. Mr. Glidden was patrolling at the time, with Deputy State Fish and Game Commissioner R. J. Little, of Banning. The flock of stilts was the largest either of the men had ever seen.—CLINTON G. ABBOTT, *San Diego Society of Natural History, Balboa Park, San Diego, California, October 11, 1930.*

Further Occurrences of Emperor Geese in California.—Fragments of an Emperor Goose (*Philacte canagica*) are contained in the Museum of Vertebrate Zoology under no. 52036, by gift from Mr. Franklin J. Smith of Eureka, from a bird found dead on the beach south of Buhnes Point, Humboldt Bay, March 1, 1925. This find was witnessed by both Mr. Smith and Mr. Bertram O. Betterley; the bird, however it met its death, had been partly destroyed by seagulls. Mr. Smith stated that this is the first record of the species known to him for Humboldt Bay since 1884, when the bird recorded by Townsend (Auk, 3, 1886, p. 491) was taken.

Fragments of another Emperor Goose are in this Museum (no. 54483) that were saved from a bird that was killed on Pit River near McArthur, Shasta County, January 20, 1930. This goose was sent by Mr. F. L. Fleming, of the Fall River Joint Union High School, who stated that the bird was found by boys on the river with other geese that "became very poor while their feed was covered. From time to time some were found stuck to the ice by the tips of their wings." This last record station is farthest interiorwards, that is, away from the sea-coast (some 140 miles), of all the records of the Emperor Goose to date.—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, December 7, 1930.*

EDITORIAL NOTES AND NEWS

The Sixth Annual Meeting of the Cooper Ornithological Club will be held in the San Francisco Bay region, May 15-17, 1931. Sessions for the presentation of papers will be held at the California Academy of Sciences in San Francisco and on the campus of the University of California at Berkeley. President L. H. Miller of the Board of Governors has appointed the following local committee to handle arrangements for the meeting: general chairman, Alden H. Miller; program, J. Grinnell; hospitality, Mrs. A. S. Allen; publicity, H. S. Swarth; meeting places, J. M. Linsdale; finance, T. I. Storer. The tentative program includes motion pictures of processes in bird physiology and of life history studies on rare western birds, the annual dinner, a social evening during which opportunity will be given to see the Museum of Vertebrate Zoology in its new location in the recently completed Life Sciences Building at Berkeley, and a Sunday morning trip by automobile to some point in the Bay region, probably in the Napa Valley, near St. Helena. Further details will be announced in the March issue of the Condor. The Tenth Annual Meeting of the Board of Governors will be held in connection with the annual meeting of the Club.

The magpies (both yellow-billed and black-billed) have for several years formed the subject of a special natural history study by Jean M. Linsdale. Although many facts are known about these common birds, great gaps remain in the existing knowledge of them. Doubtless the notebooks of many Cooper Club members contain facts that would help to fill these gaps. Dr. Linsdale, who should be addressed at the Museum of Vertebrate Zoology, University of California, Berkeley, will appreciate receiving records of first-hand observations of these birds, either regarding places of occurrence or concerning any phase of life history or behavior.

A comprehensive study of the Baird Sparrow has been undertaken by Mr. B. W. Cartwright and associates, who will appreciate such information concerning this species as breeding data, dates of migration, and data from labels of speci-

mens. Facts regarding the southern limits of the winter range are also needed. Communications along these lines should be addressed to B. W. Cartwright, 392 Woodlawn St., Deer Lodge, Winnipeg, Canada.

Dr. A. K. Fisher, Senior Biologist, United States Bureau of Biological Survey, makes some forceful comments concerning the predatory bird problem in a recent issue of *Fins, Feathers and Fur* (no. 92, December, 1930, p. 13). Under the title "Reviewing House Cats and Birds of Prey", he says, among other things: "It readily can be understood that an individual will become prejudiced against a Cooper hawk or a sharp-shinned hawk that molests his chickens or birds, but how anyone with even a vestige of open mind can believe that a marked general diminution in the abundance of bird life is due to inroads of natural enemies is beyond normal comprehension. . . . It is hard to understand the mental complex of those professing faith, and who approach the Infinite with full adulation, attempting, without a blush, to rearrange in Nature to suit their selfish wishes those things which have worked in harmony for millions of years. . . . Sportsmen and naturalists agree that cats will eat mice, but not if birds are available for food. . . . If [non-native] cats and rats could be eliminated other natural enemies of birds need hardly be considered." These statements of Dr. Fisher's include the essential definition of the "balance of nature" as many naturalists use that phrase. And of course it applies far and wide as well as in connection with the influence of birds of prey on other birds.

Dr. Adolphus L. Heermann, writing in 1854 (*Pac. R. R. Repts.*, vol. 10, 1859, Zool., no. 2, p. 34), says of the Barn Owl: "At one time [when he first visited Sacramento, in 1849] they frequented the old hollow trees of Sacramento City, but have gradually disappeared, as their old haunts have been destroyed to make way for the *march of improvement and civilization.*" Italics ours, to show how the naturalist's concern of today at the effects of human activities upon wild animal life but repeats that of the naturalist of 65 years ago; only the rate of disappearance in later years seems ever to increase.—J.G.

Referring to the Mockingbird, we see a great deal written concerning that bird's "powers of mimicry." We just wonder if there be in that species, or any other bird, the exercise of any real process of imitation. In this connection, see the thoughtful article of J. Paul Visscher, in the *Wilson Bulletin*, vol. 40, December, 1928, pp. 209-216.

Dr. Alden H. Miller has undertaken a systematic revision of the Juncos and invites assistance in the way of loans of specimens of critical importance or of information in any way bearing on this problem. His revision of the North American Shrikes is now completed and the manuscript is in press. Dr. Miller may be addressed at the Museum of Vertebrate Zoology, University of California, Berkeley.

An excellent handbook of "The Birds of Golden Gate Park, San Francisco" has just appeared (November 22, 1930) under the authorship of Mr. Joseph Mailliard and under the auspices of the California Academy of Sciences. It is of 84 pages, of crown octavo size, with flexible board covers, and sells for 75 cents. There are 94 simple but quite satisfactory line drawings of as many kinds of birds, and each of these is accompanied by a brief description and a paragraph on the opposite page drawn up to aid identification in the field. The combination of concise description, effective illustration and convenient size for pocket use, would appear to insure wide use of this booklet on the part of the amateur nature-seeking public. And the extensive Golden Gate Park, with its abundant bird-life, located within a large city, provides just such a public in increasingly large measure.—J.G.

Western ornithologists should be interested in a study that has been inaugurated covering the Gambel Quail from about the same standpoint as Stoddard's investigations on the southeastern Bob-white. In response to the convincing arguments of Mr. Aldo Leopold (a Cooper Club member), the "Sporting Arms and Ammunition Manufacturers Institute" has established four "Game Bird Fellowships," awarded, respectively, to the universities of Michigan, Wisconsin, Minnesota and Arizona. Birds that are being studied are the Ring-necked Pheasant, Hungarian Partridge, Ruffed Grouse and Gambel

Quail. The "Institute" supplies the financial backing, the several universities exercise general supervision over their parts of the undertaking, and the United States Bureau of Biological Survey cooperates in an advisory capacity, and in other helpful ways. On July 1, 1930, the Gambel Quail investigation was put in charge of Mr. David M. Gorsuch, who in years past has acted as field assistant in Biological Survey investigations and for the California Academy of Sciences. Headquarters are established near Tucson, Arizona, at the Florida Ranger Station, on the western slope of the Santa Rita Mountains, where the extensive Santa Rita Range Reserve offers various advantageous features for such a study. The Gambel Quail is abundant there, and under relatively primitive conditions, while the Scaled Quail and Mearns Quail also occur, at the margins of their habitats, and formerly the Masked Bob-white was found in the same region. The hope of the sponsors of these fellowships is, of course, for better shooting as a result; but even though we may not all sympathize with this objective the studies are not to be derided on that account. In fact, if wild birds are to be shot for sport at all it would seem not only justifiable but the obvious thing to do, to subject each game species to such an investigation as would tell us exactly what we were doing in our shooting.—H.S.S.

PUBLICATIONS REVIEWED

A CENSUS OF BRITISH HERONRIES.—What gains can be made for ornithology by the distillation of "common knowledge?" We might divide scholars into two classes, the Classical or Faustian, delving into secrets that no man knows, and a more modern type who is expert to extract the knowledge of the inarticulate herd. For the first his secluded tower and the sign of the macrocosm, if he can find it. For the second the statistical laboratory, the questionnaire, and the return post-card. How much safer the latter's work would be if we all leaned more to the side of ignorance and less toward "knowing so many things that ain't so!"

¹ "Report on the 'British Birds' Census of Heronries, 1928." By E. M. Nicholson. London, H. F. and G. Witherby. Reprinted from "British Birds", xxii, 11, April 1, 1929, pp. 270-372. Post 8vo. Paper.

At any rate, a better application of the statistical method will be far to seek. *Ardea cinerea cinerea* has been sought out and counted in England and Scotland, and to some extent in Ireland, by nearly 500 observers, so thoroughly that a concrete total, viz., 3744 to 3843 pairs, may be considered reliable for England, and equally definite figures for Scotland may be hoped for soon.

The launching of the work is another good thing which we owe to H. F. Witherby of "British Birds" and bird "ringing" fame, who acted on the suggestion of E. M. Nicholson. The latter dealt single-handed with the great body of returns. A great number of lieutenants took charge of their separate counties, and the Misses L. J. Rintoul and E. V. Baxter still carry on in Scotland.

Some 7 introductory pages deal with the history of earlier counts and the methods of the present one. Follows 16 pages of tabular analysis (alphabetically under counties), of existing heronries, with the year's count, information on previous years, foundation (date or "immemorial"), and authorities; 19 pages of similar analysis of extinct heronries, 3 pages of summaries, and a 6 page "Index to Information" including a list of the 255 English and Welsh heronries in order of size. In the third section, of 36 pages, Mr. Nicholson condenses a surprisingly complete discussion of the material under such headings as relations with man; relations with other species (predatory, parasitic, social, and competitive), and such aspects of the vital statistics as fertility, mortality, distribution, changes and ages of sites, foraging ranges, etc. The paper ends with a reference bibliography of 74 titles.

The most notable conclusions are that no serious *general* decrease is in progress, though *local* situations are often serious, and a much greater population would follow reduced human persecution, the worst of which may be laid at the door of the fisherman. Recommendations, in brief, are (1) that if this census is to have real value another should follow about 1940; (2) that scientific economic investigation is acutely needed; and (3) that further protective measures should await its results. These sections have a strangely familiar ring.

It is a pleasant surprise to find a textual section of such interest and charm in such

a paper. Part of this is due to the rare quality of Mr. Nicholson's thought and style, part, especially to us, in the pleasant flavor of the mixture of ornithology, history, and romance—the study of a bird whose preservation was a virtue of feudalism and perhaps depended on the sport of falconry, and which to the present moment owes its abundance to the great landowners. Mediaevalism is omnipresent. The reviewer, for example, during some years of interest in conservation, has had occasion to foam at the mouth over many excuses for the destruction of birds, but never yet because they "disturbed the meditations of a religious house, into whose hands the property had passed!"

England, and Mr. Witherby in particular, have a sad habit of getting ahead of us in these matters. There are many birds, and many unit areas upon which we, here in America, greatly need similar work.—T. T. McCABE.

PHILLIPS AND LINCOLN ON THE CONSERVATION OF WATERFOWL.*—This book is addressed primarily to gunners, yet we have read it through with increasing conviction that it embodies fact and interpretation that make it a classic in the general literature of conservation. Indeed, so many widely bearing questions are given sound discussion that we venture to declare that no one henceforth can talk intelligently about any phase of vertebrate conservation until he has read and studied Phillips and Lincoln on the subject.

The present combination of authorship, with the background of each author, explains in part the superior results of their work as set forth in this volume. Phillips has behind him the wide experience of a true sportsman plus the technical knowledge and analytical capacity demonstrated in his monographic "Ducks of the World", while Lincoln brings knowledge gathered during his years of work in field and laboratory and also the results of access to the masses of information gathered under the auspices of the

*American Waterfowl | Their Present Situation and the Outlook | for their future | by | John C. Phillips | and | Frederick C. Lincoln | with illustrations by | Allan Brooks and A. L. Ripley | [design] | Boston and New York | Houghton Mifflin Company | The Riverside Press Cambridge | 1930 [our copy received December 4]. Octavo (160 x 240 mm.), pp. xvi + 312, frontispiece, 7 unnumbered plates, 5 maps, 11 headpieces to chapters.

Biological Survey. In the latter connection, the book is most appropriately dedicated "To Edward W. Nelson Chief of the United States Biological Survey 1916 to 1927 in recognition of his many years of service in the cause of American wild life conservation . . .".

The subjects treated in the eleven chapters of this book include breeding areas, wintering grounds, migration, drainage and irrigation, shooting as an adverse factor in the wild-fowl supply, natural enemies, oil pollution, poisons and diseases, food plants, and methods of hunting; and a final chapter deals with the outlook for conservation of waterfowl and proposes certain policies. There is also an Appendix listing the game wild-fowl of North America, with their ranges, the statuses of the several species, and a record of their body-weights.

As a practical conservation measure the authors make their strongest plea for the retention of marshlands and lakes affording subsistence and breeding places for waterfowl. They are rightly strong in their condemnation of the "drainage fever", such as has so often resulted in huge losses to the taxpayers and farmers who have been immediately concerned. The Kankakee, Illinois, "drainage folly" is cited, and we could add other examples from our own knowledge of conditions here in California. Many such "reclaimed" areas should be allowed to return to original condition.

A strong economic plea is here made for the "aquatic farming" principle whereby fish, fur-bearing mammals and wild-fowl can be encouraged consistently with the retention of great storage reservoirs, natural or artificial, in the upper parts of drainage basins. All through the book emphasis is laid upon the propriety of conserving fur-bearing mammals on such areas as being wholly compatible with the highest service of the same areas as producers of waterfowl. Some unqualified statements of these biologists, who are in so excellent a position to warrant them, are worth citing here.

"Vermin" is defined (p. 188) as including "all animals that kill other animals that man himself desires to kill." The average sportsman's complaint against "vermin" is not grounded in adequate fact. All carnivorous mammals, save the house cat everywhere and the coyote in a few places, are, from the standpoint of waterfowl conservation, practically harmless, and they are valuable as fur-bearers,

control of their numbers being "maintained by trappers who are seeking furs for the market" (p. 190).

As for birds of prey, the authors assert "confidently" (p. 188) that "the idea prevalent in the minds of many sportsmen that hawks and owls are responsible for a heavy mortality among waterfowl is utterly fallacious."

Phillips and Lincoln make a point of defending the private gun club, this despite certain admitted shortcomings, on the ground that such clubs are doing more today toward conserving the waterfowl supply than any other agency. They constitute the most important remaining loafing and feeding grounds. We, ourselves, have heard that claim before, and were dubious of it. But the present analytical statement of the case for the private club leaves us convinced! Pioneer opportunities for free shooting of waterfowl have just about come to an end. Practically all shooting territory *not* owned by private clubs is operated on a commercialized public or semi-public basis, with all sorts of abuses resultant upon the endeavor to get the greatest immediate profit out of the investment, with no thought of conserving "principal." The proportion of wild-fowl hit and lost is very much greater today than it ever was before because of inexperienced shooting at long range with repeating guns. A huge waste results from the extra crippling of birds. On the other hand, the private club fosters sportsmanship through well-observed rules concerning guns, days, and various other matters making for preservation of the supply of birds, all in their own long-time interests. The authors are against the so-called free public shooting ground and we find ourselves aligned with them in this after reflecting upon our own recent field observations. But of course, here, we would urge that the inviolable wild life refuge, of the nature of our National Parks, is far the better means of preserving our waterfowl, in the interests of all of the people.

As to modern sportsmen's methods the authors admit that, "when we bring into play live decoys, repeating guns, and unlimited intensive baiting, we have a combination capable of tremendous abuse." Such practice, they freely say, does not accord with good sporting ethics, and of course it is one of the reasons why especially our geese are now disappearing so fast here in California. In general, the

authors appear to be opposed to the baiting method of attracting and holding ducks on shooting grounds. Indeed, they suggest that such procedure may upset the exercise of the migratory instinct to such extent as to operate for disaster to a local duck population irrespective of shooting.

The use of the repeating gun is unequivocally condemned. "The pleasure to be derived from increased skill in the use of the ordinary double gun will far outweigh any dubious thrills which the modern shooter gets from the operation of a machine gun."

There is one contention of the authors that does not appeal to us—indeed which seems not consistent with some of the facts they themselves set forth. They say (p. 239) that "the most important element in securing our future game supply is that great group of enlightened sportsmen whose confidence and cooperation must be retained at all costs;" and elsewhere they speak rather disparagingly of the claims of the field-glass, "sentimental", and theorist type of conservationist, as if it were not *per se* just as worthy an aim to seek out a duck to look at, to admire, to study, as to shoot at. Yet, on another page they stress the need of "an entirely new game policy", of limited shooting for the economically favored few; there is not, and there never can be, enough game birds to go around; equal opportunities cannot be accorded every man desiring to shoot. There *must* be a great reduction in number of shooters. Supplantation of shooters by recreationists with other objectives, seems to us quite as practical a thing, to expect and now to encourage, as the "policy" in question, in properly justifying the conservation of not only game waterfowl but also the rest of our native fauna in so far as the interests of our entire citizenry permit. More and more the influence of the non-shooting public will weigh in these matters; and already they have begun to weigh—to good purpose along certain lines, though admittedly not so well in other directions, just as the authors point out.

The 2000 or so ducks on Lake Merritt contribute to the enjoyment of more people per day who merely look at and admire them, than they would in a year in serving as targets for hunters, with their "economic end" served, one by one, with the killing.

While one after another of the factors

discussed by Phillips and Lincoln might thus be debated, with resulting agreement or disagreement with them, we must again declare that their book contains so much of fact and of sound induction that it might well serve as a textbook of general vertebrate conservation.
—J. GRINNELL

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

JULY.—The Southern Division of the Cooper Ornithological Club held its regular monthly meeting on Tuesday evening, July 29, 1930, at the Los Angeles Museum, Exposition Park, Los Angeles. About twenty members and friends were present and President Willett occupied the chair. The minutes of the June meeting of the Southern Division were read and approved.

As no formal program had been planned for the evening, President Willett called for experiences and observations from those present. Dr. Miller was asked about the Asiatic Minas recently reported in the newspapers as having become established here. He told of having them called to his attention and in turn calling them to the attention of the County Horticultural Commissioner, who then went with Dr. Miller to investigate. Dr. Miller identified the birds, and the local reports indicated that at least one brood of young had been raised. Two specimens were collected that day, and the Horticultural Commissioner has reported four more killed since then. It is hoped that if this is not all of them, the remainder will be disposed of shortly. Dr. Miller told of the Mina in the Hawaiian Islands where it had spread Lantana and Guava over the pasture lands of the islands and had been a factor in driving out the native birds. He also stated that it has proven a nuisance where it has been introduced in South Africa.

Mr. Reis told of seeing an albino Light-footed Rail near Balboa. Mr. Willett reported the conditions favorable for birds in the country around Alturas, in the northeastern corner of California, where he spent a few weeks this summer. Dr. Test, of Oberlin, spoke of the change from eastern to western species of birds observed as he drove westward. Mr. Quattlebaum told of the birds he saw on a recent trip via Central America, northern South America, and Cuba. Dr. Miller told of

"hooting" two Horned Owls to the dividing line between their respective territories, but he was unable to get either owl to cross that dividing line either when the other owl was close to the line or far distant from it. Mr. Partin reported seeing nesting Farallon Cormorants at La Jolla.

Adjourned.—HAROLD MICHENER, *Secretary*.

AUGUST.—On Tuesday evening, August 26, 1930, the Southern Division of the Cooper Ornithological Club held its regular monthly meeting at the Los Angeles Museum, Exposition Park, Los Angeles. About twenty members and friends were present. In the absence of President Willett, Vice-President Pemberton presided. The minutes of the July meeting of the Southern Division were read and approved.

Dr. Walter P. Taylor, of Tucson, being present, was called upon for a talk. He spoke chiefly of the characteristics of the Nighthawks in Arizona, which differ from those of the Nighthawks of the northwestern United States.

The remainder of the meeting can best be recorded by quoting from the minutes of a meeting held some twenty odd years ago as follows: "The balance of the evening was spent in ornithological chat, very interesting to those participating, but hard to record." In the present case, nearly every one present participated and many birds were discussed. Mr. Chambers, after telling of his efforts to find Sage Hens, suggested that the Cooper Club should try to get a completely closed season for these birds.

Adjourned.—HAROLD MICHENER, *Secretary*.

SEPTEMBER.—The Southern Division of the Cooper Ornithological Club held its regular monthly meeting on Tuesday evening, September 30, 1930, at the Los Angeles Museum, Exposition Park, Los Angeles, with thirty members and friends present and President Willett presiding. The minutes of the August meeting of the Southern Division were read and approved. The minutes of the August meeting of the Northern Division were read. The membership application of Mrs. Charles A. Harris, R. 1, Box 100, Carmel, Calif., proposed by Mrs. Hilda W. Grinnell, was read.

President Willett reported the receipt of a letter from Mrs. Clary enclosing a

newspaper clipping stating that the Division of Fish and Game is considering the establishment of a game preserve on a part of Salton Sea. Mrs. Clary will endeavor to keep in touch with this situation.

Dr. Bishop reported briefly on the birds encountered on Vancouver Island where he spent a part of the summer; he attributed the scarcity of birds there to the unusually dry summer, contrasting this condition with that reported by Mr. McCabe in the Northern Division minutes, of the abnormally cold, wet summer weather in central British Columbia and the accompanying scarcity of birds also there. Again the nesting place of the Marbled Murrelet came in for discussion and speculation. Dr. Miller in speaking of bird migrations told of seeing some of our northern birds arriving in Salvador in August, when he was there in the summer of 1925.

President Willett had arranged a display of African birds which had been donated to the Museum by Mr. Wilbur May, of Los Angeles. The remainder of the evening was devoted to the examination of these birds.

Adjourned.—HAROLD MICHENER, *Secretary*.

OCTOBER.—The October meeting of the Southern Division of the Cooper Ornithological Club was held on Tuesday evening, October 28, 1930, at the Los Angeles Museum, Exposition Park, Los Angeles, with twenty-five members and friends present and President Willett in the chair. The minutes of the September meeting of the Southern Division were read and approved as corrected. The membership application of Charles D. Klotz, Box 142, Pearisburg, Virginia, proposed by W. Lee Chambers, was read.

President Willett called upon Miss Miller who read extracts from a letter from Miss Pratt asking that a representative of the Cooper Club be appointed to be one of a delegation from bird study organizations to wait upon the Mayor of the City of Los Angeles on Friday, October 31, to express the desire that Eagle Rock Park be leased by the City of Los Angeles and turned over to the Park Department to be administrated as a bird sanctuary. After discussion of the subject, Mr. Pemberton moved that the Cooper Club support this movement, appoint a representative as requested, and in addi-

tion address a letter to the Mayor, over the signature of the President, urging that this park be procured and made a bird sanctuary. The motion was unanimously carried and President Willett appointed W. Lee Chambers as the representative.

Mr. Chambers announced that Dr. Bryan, Director of the Museum, had asked him to extend to all Cooper Club members an invitation to attend the opening of the new wing of the Museum on November 7. This new wing contains a hall of African mammals in wonderful habitat groups, as well as exhibits of birds, insects and marine life from other parts of the world.

Dr. Bishop gave an interesting account of the recent A. O. U. meeting as he had learned of it through correspondence. The announcement that Dr. Loye H. Miller had been elected a Fellow was greeted with applause. Dr. Bishop's comment on the titles of the papers, the authors, and the newly elected officers, fellows and members contained information and side-lights that were otherwise unobtainable by most of his hearers. The remainder of the evening was devoted to the reports of birds observed by various members present.

Adjourned.—HAROLD MICHENER, *Secretary*.

NOVEMBER.—The November meeting of the Southern Division of the Cooper Ornithological Club was held on Tuesday evening, November 25, 1930, at the Los Angeles Museum, Exposition Park, Los Angeles, with twenty-five members and friends present and President Willett presiding. The minutes of the October meeting of the Southern Division were read and approved. Membership applications were read for Wm. Youngworth, 3119 East Second St., Sioux City, Iowa, proposed by John McB. Robertson; and Harry C. Lillie, 411 S. Mariposa Ave., Los Angeles, proposed by G. Willett.

In regard to the proposal to have the City of Los Angeles obtain Eagle Rock Park for a wild life sanctuary President Willett's letter on the subject to the Mayor of Los Angeles and the Mayor's reply were read. The Mayor stated that the matter is now before the Park Commission and that he understands them to be favorable to the proposition. Dr. Miller moved that Mayor Porter's letter be accepted and filed. It was so ordered.

The following resolution proposing Dr. Charles Wallace Richmond for Honorary Membership in the Club was presented.

We, the undersigned members of the Cooper Ornithological Club propose for Honorary Membership in the Club, Dr. Charles Wallace Richmond, of Washington, D. C. Dr. Richmond's high attainments as an ornithologist have been placed at the disposal of others, individuals and organizations, and in other countries as well as our own, to an extraordinarily generous degree; ornithologists the world over are directly benefitting by his researches. We, ourselves, can show our appreciation of his altruistic spirit by making him an Honorary Member of our Club, secure in the conviction that the organization itself will gain merit and standing thereby.

Signed: Harry S. Swarth, Joseph Mailiard, Barton Warren Evermann, Tracy I. Storer, Loye Miller, W. Lee Chambers, G. Willett, Harold Michener.

Dr. Rich's motion that the resolution be adopted was seconded and unanimously carried. Mr. Chambers told those present of Dr. Richmond and his work.

President Willett read a letter from Mrs. Clary and one from Mr. M. D. Witter, Assemblyman from the Seventy-eighth District (Brawley), both in regard to the establishment of a game refuge on Salton Sea. These letters indicate that some progress is being made toward the creation of such a refuge and the education of the general public to the need of this refuge. In commenting on Mr. Witter's statement that some people think the Pelicans breeding on the islands of Salton Sea are a menace to the attempt to propagate striped bass, Mr. Willett stated that he had made for the Biological Survey a considerable study of the food of Pelicans in their nesting colonies and had found no evidence that they were feeding on food fish or game fish. He also referred to similar conclusions reached by those who studied the nesting colonies at Pyramid Lake.

President Willett spoke in favor of the adoption by the Southern Division of the resolution relating to a proposed ten-year poison campaign which had been prepared for the Northern Division by Dr. Linsdale (see p. 48, under Northern Division Minutes). In discussing this resolution Mr. Appleton told of a campaign of ground squirrel poisoning which the County conducted on and around his ranch in

Ventura County some two years ago. He stated that in so far as he could determine very few birds were poisoned and the only mammals killed, other than ground squirrels, were rabbits which were about as destructive as the ground squirrels. Mr. van Rossem spoke of Dr. E. W. Nelson being much interested in the control of predatory animals and having much first-hand information on the subject and suggested that the Southern Division should invite Dr. Nelson to speak on the subject at its next meeting before taking action on the proposed resolution. Dr. Miller stated that, while he is strongly opposed to any indiscriminate campaign of destruction of wild life, the animals destroyed by the proposed program would be almost entirely mammals and that, since the Cooper Club is an ornithological organization, it should not pass such a resolution. He said such action should be left for the mammalogists and no attempt should be made to make a mammalogical society of the Cooper Club. No action was taken on the resolution.

Mr. van Rossem moved that Dr. Nelson be invited to speak before the Southern Division on the subject of predatory animal control or any other subject suitable to Dr. Nelson. The motion was carried and the Secretary was instructed to write such an invitation to Dr. Nelson.

A letter was read from J. Murray Luck, Secretary of the Pacific Division of the American Association for the Advancement of Science in regard to a meeting of the Affiliations Committee to be held at Stanford University on December 22 and requesting that two delegates to that meeting be named. Dr. Miller moved that the Southern Division request the Northern Division to instruct its delegates also to represent the Southern Division at this meeting. The motion was carried.

Dr. Burt gave a brief review of the "Vertebrate Natural History of a Section of Northern California through the Lassen Peak Region", by Grinnell, Dixon and Linsdale, this being volume 35 of the University of California Publications in Zoology, University of California Press, Berkeley, California.

Dr. Miller, Messrs. Willett and van Rossem discussed the relative abundance of the Heermann Gull along the southern California coast during past years, the conclusion being that about twenty years ago they were very common, then during the past ten years they have been very scarce, until the last eighteen months

when they have materially increased in numbers.

Adjourned.—HAROLD MICHENER, *Secretary*.

NORTHERN DIVISION

SEPTEMBER.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held on Thursday evening, September 25, 1930, at 8 p. m., in the Life Sciences Building, Berkeley. Members and guests numbered about fifty. Since all the officers of the club were absent, Mr. Swarth presided and Mrs. Allen acted as secretary. Minutes of the August meeting of the Northern Division and also of the July and August meetings of the Southern Division were read. Two applications for membership were presented: Mr. Eustace Lowell Sumner, 1652 Euclid Avenue, Berkeley, California, by E. L. Sumner, Jr.; and Mr. Angus M. Woodbury, 248 University Street, Salt Lake City, Utah, by J. Grinnell.

Mr. Swarth announced that he would repeat his talk on "British Birds in Field and Museum" at the San Francisco Public Library on October 1. Reports of interesting species observed during the past month included a Long-eared Owl in Marin County, two Black Rails at the head of Tomales Bay (de Fremery), and Golden-crowned Sparrows just arrived at Los Gatos (Miss Emily Smith). Mr. Swarth showed two specimens of the Mikado Pheasant which was first described from a few tail feathers retrieved from the helmet of a savage and brought to London. Later, a few live birds were taken to England and of these, three came into the possession of Mr. Beebe. More recently a shipment was received by a San Francisco dealer. Of these, three failed to survive and were preserved at the Academy of Sciences in San Francisco.

The program for the evening was presented by Mr. E. L. Sumner, Jr., who showed in lantern slides the results of a study of young eagles made near Chino in San Bernardino County. In the nest in a sycamore tree three birds were hatched. The youngest and smallest was taken into the laboratory and fed by hand but died of rickets probably caused by the lack of bone in the rat diet; the second was successfully reared in the laboratory and then exchanged for ten days with the third which had been raised in the nest. From observations made, both in the laboratory and at the nest site, Mr. Sumner presented many interesting and

valuable contributions to what is known about the growth and behavior of young eagles.

Adjourned.—AMELIA S. ALLEN, *Acting Secretary*.

OCTOBER.—The Northern Division of the Cooper Ornithological Club held its October meeting on Thursday the 25th at 8 p. m. in an auditorium of the Life Sciences Building on the University Campus. President Storer presided and about fifty-five members and friends were present. The minutes of the September meetings of both Northern and Southern divisions of the club were read. The name of Clifford C. Presnall, Assistant Park Naturalist, Box 332, Yosemite National Park, Calif., was presented by Mr. C. A. Harwell.

The following recommendation was read:

We, the undersigned members of the Cooper Ornithological Club, propose for Honorary Membership in the Club, Dr. Charles Wallace Richmond, of Washington, D. C. Dr. Richmond's high attainments as an ornithologist have been placed at the disposal of others, individuals and organizations, and in other countries as well as our own, to an extraordinarily generous degree; ornithologists the world over are directly benefitting by his researches. We, ourselves, can show our appreciation of his altruistic spirit by making him an Honorary Member of our Club, secure in the conviction that the organization itself will gain merit and standing thereby.

Signed: Harry S. Swarth, Joseph Mailiard, Barton Warren Evermann, Tracy I. Storer.

Mr. Swarth and Mr. Storer spoke of the personality, scientific attainments, method of work, and publications of Dr. Richmond.

When observations were called for, Dr. Evermann gave an interesting account of a visit made to the upper Sacramento Valley the second week in October to investigate possible refuge sites for ducks and geese. The largest numbers of these birds were seen at Spaulding's ranch near Williams. At dawn on Sunday morning, October 12, after a rainy night, Dr. Evermann observed from a blind continuous lines of White-fronted Geese which numbered many thousands. About fifty American Egrets were seen, beside other herons, Yellow-legs, Killdeer, Coots, Tule Wrens, and Blackbirds.

Mr. W. Otto Emerson described a visit to the fruit ranches of the San Joaquin Valley in the company of Mr. Rollo Beck. Mr. Dixon told of the draining of the Tule Lakes from which the water is being diverted to alfalfa fields below with a consequent shrinkage of the lakes to about one-fifth of their former size. Mr. Cain reported seeing the Slender-billed Nuthatch on October 18 at the Boy Scout camp, where also the Red-breasted Nuthatch has remained all summer; also from the Sears Point road a few Long-billed Curlew, a number of American Egrets and four White-tailed Kites; and at the mouth of the Russian River a Red-throated Loon. Hermit Warblers were seen by another Club member in the canyons back of Mt. Hamilton on October 5. Mr. Storer quoted Mr. Boyd who wrote of the arrival of the Ross Goose on October 16, and of the presence of about 100 American Egrets and two Snowy Egrets near Marysville, where the rice growers are beginning to complain that these dainty birds tread down the rice.

The evening's program was given by Mr. A. M. Woodbury who showed beautiful colored slides of the Zion National Park and commented upon the birds found in the different sections of that park.

Adjourned.—AMELIA S. ALLEN, *Secretary pro tem*.

NOVEMBER.—The November meeting of the Northern Division of the Cooper Ornithological Club was held on Tuesday evening, November 25, 1930, at 8:00 p. m., in Room 2003, Life Sciences Building, University of California, Berkeley, with about seventy-five members and guests present. Mr. Alden Miller presided. Minutes of the Northern Division for October were read and approved. Minutes of the Southern Division for October were read.

Attention of members was called to a letter from Dr. Luck, Secretary of the Pacific Division of the American Association for the Advancement of Science, announcing that a meeting of the entire Association will be held in Pasadena, California, June 16 to 20, 1931. Dr. Luck requested the appointment of two delegates from the Northern Division of the Club to be present at the meeting of the Affiliated Societies to be held at Stanford University on December 22. The Chair appointed Dr. Barton W. Evermann and Mr. Joseph Mailiard.

The following resolution was read by

J. M. Linsdale and its adoption requested:

Whereas the Northern Division of the Cooper Ornithological Club stands for the conservation of wild life in general; and

Whereas the experience of members of this club shows increasingly serious conditions for wild life, resulting from the extensive and often indiscriminate campaigns planned and sponsored by governmental executives, ostensibly for the control of animals occasionally detrimental, which campaigns, especially through the use of poison, are leading toward outright extinction of animals known to be beneficial; and

Whereas such destruction of harmless and beneficial wild life will be greatly increased by adoption of the ten-year co-operative program for the control of predatory animals as provided for in bills, numbered S. 3483 and H. R. 9599, now before Congress; therefore

Be it resolved that this proposed ten-year program should be abandoned; and

Be it further resolved that the executive officials of the Bureau of Biological Survey should: (1) Assume an impartial viewpoint, not stressing damage done by any species and underrating its benefits; (2) return to its former policy of recommending control only where need is shown on the part of the community at large, rather than in some special, minority interest; (3) develop field practice which conforms to stated official policy; and (4) abandon destructive poison operations (save in an emergency) in favor of a method less damaging to wild life in general.

Mr. Joseph Dixon moved that the resolution be adopted by the Northern Division. The motion was duly seconded and unanimously carried. Mr. Ward Russell moved that copies of the resolution be sent to members of the Biological Survey. This motion was duly seconded and unanimously passed. Mr. Cain, Mr. Follett and Dr. Ritter suggested names of other individuals who should be interested in receiving copies of the resolution and the Secretary was instructed to send copies to these persons.

Mr. C. A. Harwell read the following resolution concerning the selection of a State Bird and moved its adoption:

Whereas a campaign for the selection of a State Bird for California by popular choice was inaugurated by the California Audubon Society and was carried on for a two-year period ending January 1, 1930,

with the active support of the Audubon Association of the Pacific, the Cooper Club, and other interested organizations; and

Whereas every opportunity was taken to acquaint the people of the State with the campaign and with the list of bird candidates nominated through schools, clubs, organizations, lodges, the press, and the radio; and

Whereas one hundred sixty-nine thousand individual votes were received and tallied, and the California Valley Quail was clearly victor in this popular vote; therefore

Be it resolved that the Cooper Club, approving the campaign and the bird chosen, respectfully ask the Legislature of our State to enact suitable legislation to proclaim the California Valley Quail the official State Bird of California.

The motion was duly seconded and unanimously passed.

Upon the request of the Chairman, Mr. Joseph Mailliard briefly reviewed the booklet, "Birds of Golden Gate Park", of which he is the author, and which is issued by the California Academy of Sciences for the use of bird students in the park. Mr. Mailliard explained that the publication of this guide, selling at seventy-five cents per copy, was designed to fill the need often expressed by leaders of bird-study groups for a book of this type.

Seasonal bird observations included a White-throated Sparrow and Varied Thrush noted by Mrs. Allen, a White-throated Sparrow seen by Mr. Harwell and Mr. Ralph Hoffmann at Santa Barbara, Golden-crowned Kinglets seen by Mr. Cain at the Oakland Scout Camp, and Band-tailed Pigeons seen November 11 on Mt. Tamalpais by Leslie Hawkins and recently in Strawberry Canyon by Alden Miller. Mr. Mailliard stated that he had found birds much less numerous than usual this fall about his place at Woodacre, Marin County. Last year by November 25 he had banded 500 White-crowns, whereas this year only 150 have come into his traps.

The evening's speaker was Mr. Joseph Dixon whose camera this past summer recorded many beautiful pictures showing the rearing of young Trumpeter Swans in Yellowstone National Park. Mr. Dixon's photographs were supplemented by valuable comments upon the life histories of these rare birds.

Adjourned.—HILDA W. GRINNELL, Secretary.



For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of 15 cents per line. For this department, address JOHN MCB. ROBERTSON, Buena Park, California.

FOR SALE—An almost complete file of *The Condor*.—ELIZABETH W. FISHER, 2222 Spruce St., Philadelphia, Pa.

FOR EXCHANGE—Have Bent's Life Histories, Bull. 130, Waterfowl (uncut, paper); want to exchange evenly for Bent's Life Histories, Bull. 126, Waterfowl, or Bull. 107, Diving Birds, in like good shape.—W. H. RANSOM, 415 P. O. Bldg., Spokane, Washington.

FOR SALE—The Condor: vols. 21-29, 31-33, complete; The Auk: vols. 37-48, complete; Journal of Mammalogy: vols. 7-12, complete; Bent's Life Histories, Limicolae (pt. 1); Dall's Spencer Fullerton Baird; Van Denburgh's Reptiles of Western North America (2 vols.).—M. E. DAVIDSON, 717 Lincoln Ave., Palo Alto, California.

FOR SALE—Bent's Life Histories: Gulls and Terns, \$6.00; Petrels and Pelicans, \$5.00; Marsh Birds, \$5.00; Shore Birds, Part I, \$4.00; Shore Birds, Part II, \$4.00.—W. LEE CHAMBERS, 2068 Escarpa Drive, Eagle Rock, California.

FOR SALE OR EXCHANGE—Books and pamphlets on birds, etc., and odd numbers and volumes of *The Auk*, *The Condor*, etc. Lists on application. Exchange lists solicited. Wanted: American Naturalist.—C. A. KOFOID, 4079 Life Sciences Building, Berkeley, California.

FOR SALE—One thousand negatives and several hundred lantern slides, made by the late Walter Bruce, president of the Spokane Bird Club. Many of these are originals, some copied from books. Slides 25 to 50 cents each.—J. L. SLOANAKER, 1117 Maxwell, Spokane, Washington.

WANTED—The following volumes: Dana, J. D., 1852-53, Crustacea, Parts 1, 2, in United States Exploring Expedition, vols. 13, 14, pp. 1-1620; Folio Atlas with 96 Plates, 1885.—STEVE A. GLASSELL, 9533 Santa Monica Blvd., Beverly Hills, Calif.

FOR SALE—Preliminary Catalog of the Birds of Missouri, by O. Widmann, price \$3.00 per copy.—The SECRETARY of the Academy of Science, Washington University, St. Louis, Mo.

FOR SALE—The library of the late J. Eugene Law is to be sold. Please send 4 cents in stamps for an itemized list.—MRS. LAURA B. LAW, Box 247, Altadena, Calif.

WANTED—Auk: vol. I, nos. 2, 3; Nuttall Bulletin: vol. I, nos. 2, 3, 4, vol. II, nos. 3, 4.—WILLIAM G. FARGO, 506 Union St., Jackson, Michigan.

WANTED—An old skin or mounted specimen of the California Condor, taken before the present law prohibiting the shooting of this bird went into effect. In answering advise date collected, condition and sex.—MILTON S. RAY, 2901 Broadway, San Francisco, Calif.

WESTERN BIRD-BANDING ASSOCIATION

Recommends and Supplies

The new W.B.B.A. Two-compartment Trap; in the United States, west of Mississippi River,	\$1.50 postpaid
East of the river, and in Canada,	\$1.75 postpaid
With bottom, as gathering cage, add,	\$0.25 postpaid
The new W.B.B.A. Water (Warbler) Trap; in the United States, west of the Mississippi River,	\$3.00 postpaid
East of the river, and in Canada,	\$3.25 postpaid
Hoffmann's Birds of the Pacific States,	\$5.00 plus postage

WESTERN BIRD-BANDING ASSOCIATION, Museum of Vertebrate Zoology,
Berkeley, California

COOPER CLUB PUBLICATIONS

Until December 31, 1932, the following Cooper Club publications are for sale at greatly reduced prices. The old price is shown in parenthesis, followed by the present price.

THE CONDOR

Vols. XIV to XXIX (1912-1927) The Condor, complete, each volume (\$2.00 and \$3.00) - - \$1.00

PACIFIC COAST AVIFAUNA

No. 1, 1900 Birds of the Kotzebue Sound Region, Alaska; 80 pp., 1 map (\$1.50) - - - \$0.50
By J. GRINNELL

No. 5, 1909 A Bibliography of California Ornithology; 166 pp. (\$2.00) - - - \$0.75
By J. GRINNELL

No. 7, 1912 Birds of the Pacific Slope of Southern California; 122 pp. (\$1.50) - - - \$0.50
By G. WILLETT

No. 8, 1912 A Systematic List of the Birds of California; 23 pp. (\$0.50) - - - \$0.25
By J. GRINNELL

No. 9, 1913 The Birds of the Fresno District; 114 pp. (\$1.50) - - - \$0.50
By J. G. TYLER

No. 10, 1914 Distributional List of the Birds of Arizona; 133 pp., 1 map (\$1.50) - - \$0.50
By H. S. SWARTH

No. 11, 1915 A Distributional List of the Birds of California; 217 pp., 3 maps (\$3.00) - - \$1.00
By J. GRINNELL

No. 12, 1916 Birds of the Southern California Coast Islands; 127 pp., 1 map (\$1.50) - \$1.00
By A. B. HOWELL

No. 13, 1919 Second Ten-Year Index to THE CONDOR; 96 pp. (\$3.00) - - - \$1.00
By J. R. PEMBERTON

No. 14, 1921 The Birds of Montana; 194 pp., 35 illustrations (\$6.00) - - - \$2.00
By ARETAS A. SAUNDERS

No. 15, 1923 Birds Recorded from the Santa Rita Mountains in Southern Arizona; 60 pp., 4 illustrations (\$1.50) - - - \$0.50
By FLORENCE MERRIAM BAILEY

No. 16, 1924 Bibliography of California Ornithology; 2nd Installment; 191 pp. (\$6.00) \$2.00

No. 17, 1925 A Distributional List of the Birds of British Columbia; 158 pp., colored frontispiece and map, 26 line maps, 12 ills. (\$5.00) - \$1.50
By ALLAN BROOKS and HARRY S. SWARTH

No. 18, 1927 Directory to the Bird-life of the San Francisco Bay Region; 160 pp., one map, colored frontispiece (\$4.00) - - - \$1.50
By JOSEPH GRINNELL and MARGARET W. WYTHE

No. 19, 1929 Birds of the Portland Area, Oregon; 54 pp., 21 illustrations (\$2.00) - - - \$0.50
By STANLEY G. JEWETT and IRA N. GABRIELSON

MISCELLANEOUS PUBLICATIONS

(Prices absolutely net)

Biographies

H. W. Henshaw; 56 pp., 3 pls. (from CONDOR, 1919-1920) (\$1.00) - - - \$0.50

Robert Ridgway; 118 pp., 50 ills. with a complete bibliography of his writings (from CONDOR, 1928) (\$1.50) - - - \$0.50

Bird Art Catalogues

Catalogue of an exhibition of paintings by American Bird Artists, First Annual Meeting, Los Angeles Museum, April, 1926; 24 pp. (\$1.00) - - - \$0.50

Catalogue of the work of Major Allan Brooks held in connection with the third annual meeting of the Cooper Ornithological Club May 4-6, 1928, under the auspices of the San Diego Society of Natural History, Fine Arts Gallery, Balboa Park, San Diego, Calif., 10 pp. (\$0.50) - - - \$0.25

Other Publications

Birds of the Pacific Slope of Los Angeles County. Pub. No. 2, Pasadena Acad. Sci., March, 1898; 52 pp. (\$0.20) - - - \$0.10
By J. GRINNELL

The Story of the Farallones, 1897; 36 pp., 28 ills. (\$0.20) - - - \$0.10
By C. BARLOW

For Sale by W. LEE CHAMBERS, Business Manager
2068 Escarpa Drive, Eagle Rock, Los Angeles Co., California

